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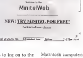
FROM THE EDITOR

Meet the Granddaddy of the Web —France's Minitel System

This month I had a chance to look at France's Minitel system up close. Minitel is an online system set up by the French telephone company 11 years ago to offset some of the printing costs associated with France's massive yellow pages. Companies in France are now treating the Minitel system very much like the World Wide Web on the Internet—as an extended yellow pages.

While I was in Paris recently I got separated from my friends. I knew the name of the place they were going, but had no address. I tried a few phone numbers I had but got no answers because it was a Saturday. I looked the place name up in the paper phone directory but came up with four or five alternatives and didn't know which one was correct. I asked the hotel clerk to help me identify which was the right one. His immediate solution was to log on to the Minitel and search on the name I had given him. He was able to match my description of what it should be with the extended description available online.



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Welcome to the

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High Penetration

The Minitel system now has something like seven million terminals in 30 percent of French homes. My associates there claim that as many as 90 percent of France's 70 million people have regular access to a Minitel terminal, either at home or through work. It is a very effective and well used online system, with over 25,000 third party services running on it. I was told that parents usually lock the systems up to keep kids away from the numerous services, which are entertaining and attractive but can run up a serious phone bill.

The Good News

The good news for information publishers is that, as the Minitel example illustrates, there is money to be made in online services. One print publishing company claimed to make 20 percent of its income from Minitel usage. They were able to charge for customers doing data entry into their system and also when the customers searched their database.

The key to this success seems to be that the Minitel systems have security issues and billing problems beat. Because the entire system is controlled by French telecom, customers feel comfortable connecting to the system and using their credit cards. The French phone company can also add billing for service usage to the phone bill. This way, they can bill for very small increments of charges. Phone companies around the world excel in their ability to charge 29 cents for one minute calls. If you don't pay, you lose your phone and – in France – your Minitel privileges.

The Bad News

So what is wrong with the Minitel system? The big downside is poor quality screen display and graphics. The system was begun in 1984 when the French phone company handed out over a million terminals to kick start the system. In order to do this, the terminals had to be inexpensive. The solution at the time was 1200 bps modems and very inexpensive dumb terminals with small screens and tiny keyboards. Now you can rent a fancier setup for about $25 a month, but it is still only using a 2400 bps modem in most cases. They are starting to talk about 9600 bps but the graphics are going to be limited to the lowest common denominator for a long time to come. Many French people are getting used to the fancy graphical user interface provided by Windows and Macintosh computers at their workplace. Most have yet to see the Internet but they are hearing about it and Internet use is growing at 15 percent a month, according to one source.

Ultimately a hybrid system may emerge, as the Minitel is establishing links to the Internet. You can have a peek at it through the Internet now but be forewarned, they want your Visa or Mastercard number to get in the door. Log on to the World Wide Web with your favorite websurfing program and use the address http://www.minitel.fr

Still, Minitel has very high home penetration, something that Internet providers would be jealous of. This compares to a very low home PC penetration in France, of under 10 percent. Compare that to Canada and the U.S., where it is now exceeding 35 percent of households. Computers in France are very expensive and the French have much better things to spend their money on, like sidewalk cafes, dressing well and fine food. The Internet is growing rapidly but Minitel provides some critical strengths that the Internet is still dealing with.

While it has its limitations, Minitel is one vision of the future of the Internet, if security and billing issues can be addressed. It is a very useful and convenient adjunct to modern life in France.

Enjoy the issue,

Douglas Alder
Editor/Publisher
editorial@tcp.mindlink.bc.ca

NEWTON USERS SPEAK UP

Agrees

Over the last year I too have been entertaining the thought of purchasing a PDA — more specifically a Newton. So I was mildly amused at your July 1995 editorial as I too have taken the same approach.

Fortunately for me I had the chance of trying out a 120 for a week from a local dealer. I actually found the handwriting recognition to be excellent.

But although I was generally impressed it was not enough for me to slap down $1,000 for what amounted to a glorified daytimer.

So when the MessagePad 100 was available for roughly $200 Canadian I ordered one. I figured at that price I can't go wrong.

Frankly, I can't see it being that much worse than the 120 at one fifth the price.

And until Apple releases a Newton with a faster processor, backlit screen and more memory the 100 will serve its purpose as a basic organizer. In fact if I really wanted to do some serious work, I would get a low end *PowerBook* before I got a 120.

Even still I'm optimistic about the future of PDAs. Like everything else it just needs to go through a teething stage.

V C via eWorld

Gently Disagrees

Editorial Greetings. I was inspired to write this note by Douglas Alder's editorial in the July *TCP*. I always enjoy his columns as he has an easy going and gentle writing style. This one was no exception. His assessment of the Newton (esp. the 100) was fair and his rating of himself was funny. Although I find that [his] concerns over handwriting overshadow the real strength of the Newton, information storage and retrieval. I am writing and e-mailing this with my Newton 120 and must say that I really love this thing. I do not use organizer software on my Mac as I do not spend all day there. So my Newton is my link to all those little pieces of info that I need through the day. As well I am the type of person who is very patient with these sorts of things — I just need to work on my handwriting.

Thanks for a great publication.

Elaine Barrington via Internet

Cries Foul

As a dedicated Newton user I was a little bit buenid ojj ans huujled (opps — better turn on character recognition) when I read your thoughts on Apple's Newton in the July issue. Really now, is it fair to review a quickly developing technology that is well over two years old and is in its fourth generation since your discount-bargain test model? Would you review other products in *The Computer Paper* on that basis? Please, we Newton users have taken our lumps. Try to go through one set of batteries on a new 120 model (they last about 25 times longer) before knocking off a review and the story will be different. Since your model, you can now get 100 percent accurate recognition software, along with your hoped-for spreadsheets, PIMs with desktop connections, communications, reference, great games and a host of built-in and third party enhancements.

More than enough to prevent you from tossing it in the office pool for someone else to try.

Stephen Kendall via Newton

DA Replies: *You know, I felt bad about trashing it, but it was a real world experi*[illegible] *I actually purchased this myself like many others might do, just as they might buy a generation-old technology.*

I tried to give the Newton another chance with the hope that I could do a follow up piece. I went back at it and bought about $600 worth of gear to make it more functional: Graffiti, a modem, Notion, a spreadsheet, rechargeable batteries, a 2 MB card and FirstClass Retriever.

I spent a week reading manuals and trying to figure out various things. Then I went to Europe on a trip. I used it about five times and was majorly disappointed. Even with Graffiti, which is a major improvement, it is much slower to input data than using a tiny keyboard.

Tiny keyboards? On the way back I stopped in at Heathrow and saw a Psion on sale in a duty free shop (Psion is a pocket size computer that has a "clamshell" design like a notebook computer and incorporates a small qwerty keyboard). I paid about $500

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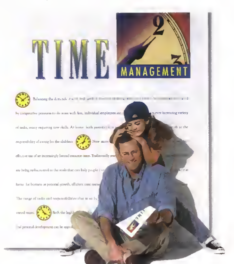

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Hi From Way Down South

Hello! I'm writing you from Argentina I want to congratulate you and *The Computer Paper's* staff for the excellent publication you have made I've got two issues (yes only two) These get into my hands via a friend of mine I am just getting into Internet be well!

Andres Hebrard kebro@cefex satlink

Grey Power?

There is a lot of Grey Power out there and your paper isn't addressing it

Unsigned

DT replies We've always thought that — apart from products aimed specifically at children — age wasn't really a factor in the use and enjoyment of computers We also don't normally publish unsigned letters, but this one has us intrigued We'd like to hear from you Grey Power advocates What are we missing that you'd like to see covered?

Long Live the BBS

Re Commtalk July I'm a regular reader of *The Computer Paper* and an online junkie

First of all BBSes are not dead but are growing. If you look at the number of BBSes in town you'll see many with an average of 75 users The reason is that they are mostly all FREE! Average Internet access that has TCIP SLIP and/or PPP is not free

Second BBSes can be islands but can also be linked to the Internet directly

Third where were his confessions? All I saw was some talk about the online world

Drew Daniels via Internet

IBM vs Clones Answer Is Clear

Just finished Ross MacDonald's article on IBM versus the Clones (July Issue) and read with great anticipation the last heading "The Envelope Please" But I was very disappointed he could not/would not draw a final conclusion Learning and hearing informed impartial conclusions is why I read *TCP*

On the other hand to be absolutely honest I like most readers came to a conclusion on that issue long ago so it probably wouldn't have mattered what he said anyway

My old PS/2 model 50 has been chugging away faithfully in a demanding SHO environment since late 1987 and has never been in the shop Except to add a second floppy drive and another I/O board the case has never been opened The original monitor still works great There could be no better advertisement than the machine I now have I guess you could say I am one of that 93 percent that would do it again and intend to just as soon as OS/2 for PowerPC is ready

David Christopher via Internet

DT Replies I think your "on the other hand" sums up the implicit conclusion Ross is drawing Brand loyalty is assembled from a subtle interplay of information and personal experience that fulfills our expectations of a "good" product Ross's piece is like those projective techniques used in personality testing what we conclude says as much about us as it does about the article's actual content

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Photos on Floppy Disk

BY GRAEME BENNETT

Black's Photography and London Drugs (in Western Canada) have recently expanded their photo-finishing services to incorporate a new digital format that may be of interest to computer users. For the last few years, it has been possible to store photographic images on CD-ROM, using the Kodak Photo CD process now offered by most photofinishers. However, this technology requires either a standalone PhotoCD player, a Philips CD-I or other compatible game console unit, or a computer with a Photo CD-compliant CD ROM drive. Although we suspect that many of our readers fall into the latter category, there are a significant number of computer-using photo enthusiasts that have been unable to take advantage of digital photography — until now, that is.

The new service puts your photos onto standard floppy disks, along with software that lets you view and export them in a variety of formats.

Like "traditional" photography, this new photographic process starts with your existing camera and standard 35mm film. However, in addition to — or in lieu of — the usual silver halide-based paper photographic prints, you can now elect to have the images stored on floppy disk, at one of three possible resolutions: 125 dots per inch (dpi), 250 dpi, or 325 dpi.

Phil Cox, of Richmond, B.C. based Prostar, which developed the technology, says he prefers to use different terminology to describe the resolution of the images. The reason, Cox explains, is that the amount of dots-per-inch calculations are not based on the size of a 35MM slide or negative, as you might imagine, but are instead based on a 4"-by-6" print.

Although Cox declined to mention the brand of scanner the company supplies as part of its digitizing system, he said it is widely used in the photo business.

Using what it says is proprietary compression technology (that, in our close examination, seems to produce digital artifacts similar to those typical of JPEG-type discrete cosine transformations), the company says it can store up to 40 "snapshot size" (<1MB uncompressed) pics, 24 "portrait size" (1MB-1.3MB) pics, between 6 and twelve 4MB images, or at the highest quality setting, one 8MB image on a standard PC floppy. London Drugs says it offers three resolution options: 125dpi, 250 dpi and 325 dpi.

It's worth taking a closer look at just what these numbers mean. (See chart)

In our tests, we were able to compress a 4.29 MB RGB image in Adobe Photoshop at the "high" quality JPEG (a popular form of compression. JPEG stands for joint photographic experts group) standard, yielding a compressed file size of 216K. Apparently the Prostar system achieves approximately the same quality and compression ratios. Although a company spokesperson declined to identify the compression method, he said it was not fractal-based compression, nor was it a standard form of JPEG.

For those not familiar with how JPEG image compression works, this compressed file, when loaded into a viewer program that understands its file format, expands back up to the original 4.29 MB file size of the original. Although compression schemes such as JPEG and Prostar's unidentified proprietary system are known as "lossy compression schemes," the difference in quality between an uncompressed original and high-quality compressed copy is minimal at worst and unobservable in most cases.

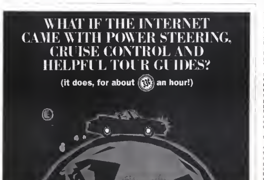
If JPEG affects image quality, why use it at all, you ask?

The reason is that, without compression, you would only be able to get one image at the lowest resolution setting on a floppy disk, as opposed to the compressed files, which give 24 or more images on one disk.

Thus, compression allows us to save much higher resolution images and/or a greater number of images per disk.

For those that don't like to JPEG's propensity to throw away bits of the image it thinks you won't notice (this is how it achieves such impressive compression ratios), there are other, "non lossy" forms of compression, such as the popular TIFF format. A 415K sample

➤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image, saved as a TIFF shrunk in size to 312K — not much of a saving

London Drugs Photos on Floppy Disk service is currently handled through the company's Broadway store in Vancouver but company spokesperson said customers can bring photos into any LD location with a 7 to 10-day turnaround

A Black's spokesperson said the service is available at all Black's locations (actually this is only partially true A Black's salesperson told me that they send it to Toronto for processing) and costs $14.99 per 24-exposure roll of film We were also amused and impressed to discover that Black's is also selling Delrina's Echo Lake, a delightful multimedia "Snapshot Album" on CD-ROM for Windows users

Contact: London Drugs, 604-872-7235 or Black's Photography 604-590-6950

Software with a View

The technology behind London Drugs Photo Disk system and the quaintly named Photo Scanning to Disk system marketed by Black's Photography is the same Both use technology developed by Prostar, a spin-off of Western Canada's ServiceWorks. Prostar has its own name for the product, which it calls Photo Diskette.

Company spokesman Phil Cox says the Photo Diskette system can store 24 to 40 images on a disk, along with a (PC only) viewer and a screensaver The included software allows the user to resize and rotate images

Mix and Match

An optional upgrade, explained Cox gives the end user the ability to take images not only from the slides or negs, but to incorporate images in popular formats such as TIFF BMP and Targa, and combine them with text and titles, complete with search capabilities Cox says Mix and Match allows the user to take the best twenty pictures they've created and assemble them in a professional presentation package ❑

DOTS PER INCH	WIDTH & HEIGHT (IN PIXELS)	# OF IMAGES (PER DISK)	FILE SIZE (UNCOMPRESSED)	COST (PER IMAGE)
125	750 x 500	24	1.07MB	1.19 *
250	1500 x 1000	6	4.29MB	2.49
325	1950 x 1300	1	7.25MB	3.49

*Minimum 5 images. Producing images on disk from a 24-exposure roll of film costs $24.95. Add $0.95 for the cost of a floppy disk and taxes to all prices. Numbers are approximate only

PhotoWorks Plus From Seattle Filmworks Offers DIY Alternative

A similar product from Seattle Filmworks is available called Photoworks Plus The US$44.95 package which is available for PC users running Windows, includes an inexpensive fixed-focus single-use camera (similar to the disposable types from Kodak, Fuji and others), an extra 20-exposure roll of film, computer software (discussed below) and a mailing bag with a coupon good for the processing of up to one 36-exposure roll of film onto floppy disk (note the discrepancy here, folks)

Like the London Drugs system, Seattle FilmWorks will deliver your photos on a floppy disk. However, Filmworks' pricing structure is quite different. The company offers only one resolution — 640x480 — but can store an entire 36-exposure roll of film on a disk at this resolution And it's cheap SFW charges only US$3.95 to add a floppy disk to an existing order of 24 photos (the total cost for processing a 24-exposure roll of film is is US$13.90 for prints negs images on floppy disk plus a postage-paid envelope and a new roll of film), for an additional $6.95, the company will add the floppy-based images to an order of 36 prints Users who wish to skip the prints altogether can get the disk-only job done for about US$9

The software that comes with the Photoworks Plus package can save these images in 50 different file formats (including PCX TIF, GIF BMP TGA, MSP WPG WMF, EPS and JPEG, making it a fairly sure bet that you can find one that is compatible with your word processor or graphics program The Photoworks software has basic image manipulation features built in, such as the ability to crop, resize and adjust brightness and contrast.

Contact: Seattle FilmWorks, 206-281-1390 or 1-800-445-3348

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32-BIT CORELDRAW 6 FOR WINDOWS DROPS VENTURA • Ottawa based Corel has been busy working on the next release of its popular CorelDRAW application for Windows and Windows 95.

CorelDRAW 6.0 for Windows, slated to be launched August 10, will be priced at US$695. The new release carries a hefty upgrade cost, however. Corel says that upgrades are US$425 from versions 3 or 4 or US$249 for owners of CorelDraw 5.0. The new release, which the company says is optimized for Windows 95, does not include Ventura Publisher, which will be sold separately. However CorelDraw 6.0 will include CorelDream, a Corel branded version of Ray Dream's 3-D modeling and rendering application, Ray Dream Designer.

The company says it will continue to sell CorelDRAW 3.0 and 4.0 at their current prices. CorelDraw 4.0 for Windows was reviewed in our Sept. '93 issue and CorelDraw 5.0 was discussed in the April '94 issue. In other Corel news, Michael Cowpland, president and chief executive officer of Corel Corporation has stated that its on-again/off-again CorelDraw for Macintosh plans are back on track, and the company plans to release a Mac version of CorelDraw "within the next nine months."

In related news, a Newsbytes reports suggests delaying the release of its CorelDraw 6 software while it waits for Microsoft Corp.'s Windows 95 almost wiped out Corel's second-quarter profit. Corel's profit in the quarter ended May 31 plunged to US$24,000 from US$5.75 million in the same quarter of last year. The drop was due in part to a decline in revenues — to US$35.21 million from US$38.97 million — due to CorelDraw 6's delayed release. — GB

Contact: Corel Corp. 613-728-8200 or Corel Customer Service 1-800-77 COREL (26735)

AS/400 POWERED BY 64-BIT POWERPC • While most desktop PC users are just now entering a new era of 32-bit computing with Warp and Windows 95, IBM has taken its big iron to the next level. In a simulcast seen in Montreal, Toronto, Calgary and Vancouver, IBM Canada launched its 64-bit AS/400 Advanced series June 21, a date that coincided with the seventh birthday of the AS/400 line.

Powering the new AS/400s are two PowerPC chips. The single chip PowerPC AS A10 will go into the lower end of the line while the AS A30, a seven-chip design that supports symmetric multiprocessing, will find a home in the premium 530 and 535 models. IBM plans to have A10-powered models ready for market by October, with the A30-based systems becoming available in December. IBM says the new AS/400s represent the company's first implementation of the 64-bit chip.

Along with the new hardware will come a 64-bit operating system called Operating System/400 Ver. 3 Rel. 6. IBM says current 48-bit AS/400 applications that have 64-bit extensions will benefit from the new system without the need for recompiling.

Base systems come with 32 MB of RAM, a 1.96 gigabyte hard drive and a quad speed CD-ROM drive.

The AS/400 line represents IBM's mid-range systems. Since it was introduced, more than 325,000 AS/400s have been sold, according to IBM. Prices for AS/400 sytems range from $13,000 to more than $1 million. — DT

CHILD FIND CANADA GOES ONLINE • Sun Microsystems, with the assistance of other government and industry partners, has helped to establish a World Wide Web site for Child Find Canada.

Child Find Canada is a non-profit organization located in Oakville, Ont. that was founded in 1986 with the aim of assisting parents locate their missing children. It also provides safety education programs designed to "street-proof" kids and to prevent child abductions.

Sun contributed funding and equipment to get Child Find Canada on the Web. Sun Microsystems supplied a SPARCstation 20 for the site, and the scanners necessary to place images of missing children on the Internet. The site will also be linked to SchoolNet, so students can view pictures of missing children and receive safety tips.

For parents, the site contains a report entitled "Child Safety on the Information Highway." It takes a look at the risks and benefits of children "surfing" the Internet and contains guidelines for ways parents can take effective responsibility of their children's online computer use.

Child Find Canada Online's World Wide Web site can be found at

http://www.discribe.ca/childfind/

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Comdex Reflects Booming Canadian Tech Industry

BY JEFF EVANS

Comdex trade show crowds. Inset: Khalil Barsoum

Canada's largest computer show invaded downtown Toronto July 12-14 to huge crowds, and presented an optimistic view of Canada's hi-tech future.

Khalil Barsoum, the new CEO of IBM Canada, opened the show with a keynote address. He urged attendees to recognize that Canada has a uniquely talented pool of innovators and entrepreneurs who are creating leading edge computer technology. In a remarkably civilized, eloquent and non-partisan address, Barsoum praised Canadian educators, health care and telecommunications professionals, and business leaders who are changing many aspects of daily life in this country — mainly for the better, he asserted — by bringing computer technology into schools, hospitals, homes and businesses. "Everyone is a user," he stated, referring to the pervasiveness of infotech.

In his bilingual remarks, Barsoum referred to progressive schools such as Burnaby South high school in Burnaby, BC, which is making creative use of computer technology in enriching students' classroom experience. Canadians want their children to become literate in new technology, Barsoum claimed, believing that this new literacy is key to realizing the opportunities of a technology-based global economy.

Trade Show

On the Comdex show floor, which filled the Metro Toronto Convention Center and spilled over to the adjacent SkyDome, over 500 exhibitors showed the latest in computer technology and services. Microsoft was the dominant presence in the software sector, with an enormous booth showing both MS applications (focused on Windows95) as well as third party products.

On the hardware side, the PowerPC processor made its appearance in many new products. Motorola, one of the developers of the PowerPC architecture, was showing its new high end servers and desktop PC workstations based on the PowerPC chip running AIX or Windows NT. According to Motorola, this new platform is receiving a good response among corporate and government users. Distributed in Canada by EMJ, the Motorola PowerStack PCs have recently been awarded the federal government's NMSO certification, allowing widespread use of the PowerStack line in government agencies.

Apple had a large and popular presence at the show, emphasizing the new, ultra fast PowerMac 9500, the consumer-oriented Performa line, and new products such as QuickTime VR and the QuickTake 150 digital camera. According to marketing director David Wright, Apple has been extremely pleased by the favorable market response to the Performa line and the PowerMac 9500. "Sales have been even better than our expectations," he enthused.

As well, according to Wright, excitement about Apple's Internet and server solutions is building rapidly. He expected to announce an Apple program to greatly expand the company's server sales later in the year.

One Canadian exhibitor notably absent from the Comdex show floor was Corel Corp. Following its usual practice, Corel declined to exhibit at the show itself, but hosted an extravaganza on July 13 at the nearby Sheraton Hotel.

Another Canadian company, Delrina, was also not present in a booth of their own. The Toronto based firm, which recently announced that it was being acquired by California based Symantec, was nevertheless showing its WinFax Scanner solution in the Fujitsu booth.

Canadian PC vendors were well represented, with 3D Micro (makers of IPC, Commodore and Bondwell PCs) having a particularly large and busy booth. Markham based ATI, one of the world's most successful makers of graphics cards, was showing their new Mac PCI graphics cards.

The Party Line

Comdex is famous for its lavish evening social functions, and this year was no exception. Your correspondent took a ride in a Microsoft balloon (which had been stolen the day before by joyriders and recovered just in time for our trip), while other *Computer Paper* people attended some of the many other functions, including a 3D Micro bash at the Wayne Gretzky hockey pub/shrine, and a giant party at the RPM disco hosted by Globelle, a major hardware distribution company.

We ended our last evening at Comdex at the interestingly named Fluid Lounge, where QuarterDeck presented their new Internet Suite, a group of slick Internet programs for those who are tired of shareware. Also present at the Fluid Lounge was the president of InContext, a small Canadian company that has been making news lately with its "Spider" World Wide Web publishing program. Dubbed by some "The PageMaker for the Web," Spider is aimed at making personal Web publishing accessible to any PC user. ❑

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Unique CPU Upgradability	from SX-33 to DX4/100	from SX-33 to DX4/100	from DX-66 to DX 100
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Max Ext Resolution	1024x768 256clrs	1024x768 256clrs	1024x768 256clrs
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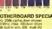

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World Tour Dangles Win 95 Carrots

BY ROD LAMIRAND

The month of June saw Microsoft swoop into Canada for its 17-city Windows 95 World Tour Part Hollywood and part tent show revivalism the two hour show was preaching to the converted in what was an unabashed Windows love in

Kicked off in Toronto and concluded in Montreal, the warm-up for Windows 95's release was a glossy pep rally in the guise of an informative presentation The four week leg of the North American Windows 95 World Tour ran simultaneously with the 21-city American Tour.

The two-hour show replete with professional video testimonials presented on dual 20-foot screens aimed at a broad slice of the PC using public including the home user, networked office user and mobile worker.

In the Vancouver version of the World Tour the two-man (Bob Taniguchi and Alan Fox up from Microsoft headquarters in Redmond, WA) presentation tag teamed the audience with a perfect blend of gee whiz wonder and self-deprecating pride The presentation opened with a video clip showing the Windows 3 1 interface Huge on stage speakers reached out and tore at the air while on screen a swirling black hole sucked away the old interface to reveal the blue sky and fleeting clouds of the Windows 95 theme With boyish charm, our Microsoft lads led us through a presentation of Windows 95 features.

An introduction to the OS, for the ball of the crowd that hadn't seen the Beta was followed by a comparison between the old and new Windows In a good cop/bad cop style the presenters competed to show that Win 95 could take Win 3 1 hands down A confirmation that Win 95 would run on a 386DX with four megs of RAM was followed by the comment that the test systems were 486s running with eight and that they were therefore in the same ballpark On the pretext of saving our time, the presenters gave up the 486s for the rest of the show and used the NEC Pentiums running with 16 MB RAM The point was made that Win 95 is a 32-bit OS, and like most OSes — the more RAM the better!

Demonstrating Win 95's Plug and Play ability the presenters did an installation and configured a CD-ROM rather smoothly On one machine Win 95 was installed over Windows 3 1 while the show continued For 15 or 20 minutes the audience was given a demo of Win 95's e-mail fax and remote connect ability from a laptop A desktop demonstration presented the case for Windows 95's ease of connecting to a LAN

The hokey-est — and most successful — part of the show was the end Play-acting the parts of a parent and child the MS boys demonstrated their vision of the three faces of the home user. Mom or Dad could be productive, and their young son or daughter could play and learn with children's interactive CD ROM-based edutainment software As for Mom and Dad's teen he/she could slip an audio disc into the CD-Player and do homework, dial in to the Microsoft Network and access Microsoft information for a school project, or even put a new Audio/Video CD in the player and experience Bob Dylan To show that Win 95 could run demanding software a couple of games were run Pitfall Harry in The Mayan Adventure, ported over from Sega, and Doom for Windows 95 were demonstrated, however neither of these games are DOS-based.

Microsoft's professional infomercial highlighted Microsoft Plus, an add on that gives the user built in themes to coordinate wall paper, mouse cursor, event sounds and screen saver Microsoft Plus also includes Internet Explorer, a Web browser. Also previewed were the new 32-bit apps such as Microsoft Office for Windows 95 that will ship at the same time as Windows 95 Microsoft also says that hundreds of other applications including Norton AntiVirus for Windows 95 will be released at the same time, or soon thereafter Which brings us to the big question Will Windows 95 ship in August as their most recent promise states?

A young man in the crowd was lucky enough to win a new NEC Pentium souped up with lots of RAM and an NEC 17 inch monitor (tour organizers Microsoft and NEC gave away one at each of the 38 North American World Tour shows) The Microsoft Machine rolled in and out of Canada in four weeks The stage is set Now let's see the goods ❑

One User's First Look at Win 95

BY JEPP HILDEBRAND

Even though I've been using OS/2 for a couple of years now, I'm the curious type and while Windows never exactly delighted me, there was no avoiding all the hype around Windows 95 So I set out to find someone who would let me play around with it for a while. Thanks to Mel at Plexxus Interactive in Winnipeg for letting me use his machine and pick his brain He showed me a lot of stuff I would never have found on my own and we discovered a few things together as well

The first thing that hit me about Windows 95 is the new look. It doesn't look like 3 1 and it doesn't act like 3 1 I like the new look (it's more like OS/2) and I like the way the mouse works now It's smoother and 95 makes use of the right mouse button The more I used it the more I liked it

But remember — I'm a long time OS/2 user It occurred to me that 3 1 users might not feel the same way After all they have had the same GUI for quite a few years now and this is a major change. Some old habits will have to be unlearned

This leads me to another positive aspect of Windows 95 the help There is extensive help — heavily indexed — to guide new users when things don't work as they expect them to Even though Mel and I used the help a lot I don't think we ever made more than one query to find what we needed

Generally the help was brief and to the point Better still there was often a special button which would open the window or program the help referred to The only problem I had using help was the lack of context-sensitivity The help facility always presented us with a searchable index

OS/2, by contrast lets you ask for help from just about anywhere Every object on the screen has a help entry on its pop-up menu and the help is very often specific to that object Sometimes it's nice not to have to search an index 95 does have some context sensitive help: most dialogs have a '?' box in the corner which will display help specific to that dialog

Another area where 95 seems to excel is in the area of DOS settings (although OS/2 has some 52 different DOS settings that you can fiddle with while Windows 95 has less than a dozen) While I personally like the high degree of control OS/2 has over DOS sessions many people find all these options overwhelming Win 95 also includes a few settings that OS/2 doesn't- font and text mode control All OS/2 text screens are 25x80 unless you issue a MODE command once it has started Font sizes can be changed but again only once the program has started. And Windows 3 1 settings? Win 95 doesn't have em, OS/2 has a bunch 'Nuff said.

I'm pleased to say that, with Windows 95 you can finally put a folder inside another folder Microsoft did something really interesting with folders — they made them look like programs. An OS/2 folder has a title bar and a window where all the objects show up. A Windows 95 folder has the addition of a menu bar and optionally, a toolbar and status line Most of the functions available

Continued on page 18

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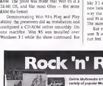

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OS/2 User's First Look at Win 95

Continued from page **16**

from the 95 menu bar are available from the OS/2 title-bar icon menu, and vice versa

The toolbar holds the most commonly used menu bar functions. The status line displays a one-line help message while you navigate the menu bar and toolbar. Initially I thought this was pretty neat – the menu bar was familiar and quick. I lost some of my enthusiasm, however, when I noticed how much space the menu bar, toolbar and status line consume. Help from the status line is nice, but after a few hours, who will need that help anymore? Does anyone use the menu bar functions so often that they need a toolbar? Fortunately the toolbar and status line can be turned off. The menu bar cannot. One of my biggest problems with any GUI is that I am always running out of desktop space – I simply don't use the menu bar functions enough to justify its presence in every folder.

There is one cool feature in Windows 95 that I just have to mention, even though it's not a feature you'll likely use a lot: resolution switching. The property sheet for the video device shows a scaled version of your current desktop, and has a slider which you can move to various resolutions (640x480, 800x600, etc.). If you move the slider, the "preview" of your desktop changes so you have an idea of what it will look like. There's also a drop-down list that lets you set the color depth. If you like the preview, one click of the button makes the change permanent and puts you in the new resolution right away. OS/2 lacks the preview, and you have to reboot before the changes take effect.

All this is very nice – a new look, a new feel, lots of help and good software migration. If you're a Windows user with the hardware to handle 95, you're sitting pretty. It looks like this is a sharp upgrade.

As an OS/2 user, I like Windows 95 a lot more than I like 3.1. I like it because just about every improvement that was made makes Windows 95 act more like OS/2. In fact, the only problems I had with 95 were when things didn't work like OS/2. Here are a couple of examples.

Both OS/2 and Windows 95 let you have multiple printer objects, each with a different set of defaults for the same printer. This is very handy, as you can have a "draft printer" and a "presentation printer" both on the desktop and there's no fiddling with printer settings when you go to print. "How do I create these extra printer objects?" you may ask. When I last looked at Windows 95, there was an "Add Printer" icon in with the printers. Double-click on it and you start a standard printer install procedure (selecting a driver, an output port, etc.). No surprises here. In OS/2, there are no less than three ways to set up a second printer object. You can use the "Selective Install" program, which lets you select drivers and ports just like you would in Windows 95, but this is overkill. You can open the "Templates" folder and drag out a printer (thus creating a new one) and a printer setup dialog will appear. You can quickly select a resident driver and pick the output port, hit OK and you're done. This is much easier than starting up the Selective Install program, but there is an even better way: hold down Control and drag the printer, which creates a copy when dropped. That's it. It has the correct driver and port because it's a copy of the original. Now under both Windows 95 and OS/2 we have to open the Properties or Settings and set up the new printer with the desired defaults.

I tried copying a Windows 95 printer object. It doesn't work. This sounds like a small thing, but it illustrates a point about OS/2 – that it can be very intuitive. It makes sense that you can copy a printer object.

Another example is the Windows 95 "shortcut." OS/2 has these as well, but they're called shadows. Under OS/2 a shadow acts EXACTLY like the original object – you can even alter the settings of the original from any of its shadows. "Shortcuts," on the other hand, have their own special properties which are separate from the properties of the original. What does this mean to the user? Well, Windows 95 keeps its printers in a special folder – if you want a printer on the desktop you make a "shortcut." This is okay until you went to change the printer defaults, when you must find the original and change them there.

What this comes down to is the Object-Oriented User Interface, a topic far too large to cover here. An OOUI adds new levels of flexibility and intuitiveness to the user interface. Right now, OS/2's got it, Windows 95 is about halfway there, and "Cairo" will have it too. While I was playing with Windows 95 and talking with Mel, one of the things he mentioned was that he liked OS/2 but found that it was just too complex. He wanted an "OS/2 Lite" that removed a lot of the complexity (and, implicitly, a lot of the flexibility).

His preference was for Windows 95, which he felt was a lot easier to use. I think this is very interesting because, in my opinion, the features Windows 95 is missing (compared to OS/2) are the ones that make OS/2 easier to use. ❑

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OS Second Looks

BY GRAEME BENNETT

Operating Systems Tested
Windows 95 (Build 490)
Apple Macintosh System 7.5.1

In March and April, we reviewed Warp, Windows 95 Preview Edition and Macintosh System 7.5. Since then, updates to all three operating systems have come out and we've had a chance to run Windows NT through its paces as well. Interestingly, the picture has changed dramatically in many ways. Here are our latest findings about Windows 95 and the Mac OS. (See the July 95 issue for our report on Warp Connect.)

We're increasingly convinced that the so-called "plug-and-play" feature of Windows 95 will be the feature that ultimately tips the scales in its favor. Anybody who's ever installed a multimedia upgrade kit, network adapter or other expansion card in an ISA bus PC will surely agree that manually configuring IRQs and memory addresses is a big pain in the you-know-where. While Windows 95 isn't perfect at the PNP game (e.g., the Macintosh is a virtually ideal plug-and-play design. Mac cards always work — the first time), it's a giant leap ahead of other PC operating systems at helping to minimize the hassles of adding or reconfiguring expansion hardware.

Reliability

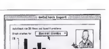
Since the so-called "Preview Edition" (AKA the "Final Beta") Microsoft has changed the way Windows 95 handles resource memory, and now allows more applications to run without running out of system resources. Depending on who you listen to, this was either done in response to criticisms such as those mentioned in *InfoWorld* magazine, which made a widely publicized fuss over the way Preview Edition handled memory, or was a project that was already underway at the time the *InfoWorld* articles appeared. Whatever the case, our latest tests show that Windows 95 can load and switch between far more applications running simultaneously than Windows 3.x was able to handle.

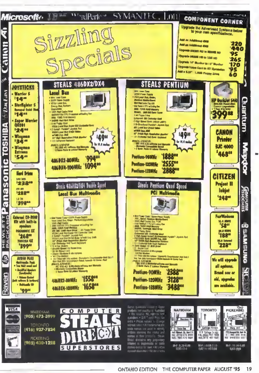
Other than that, we have not observed significant changes between the latest build of Win95 and the previously discussed Preview Edition, other than the addressing of previous shortcomings, such as the lack of a graphical diskcopy function, an uninstall option (which allows you to revert to DOS/Windows 3.x if you are unhappy with Windows 95) and some minor changes in the way that TCP/IP (Internet) connectivity is implemented.

In our tests, "Plug and Play" has proven to be the most compelling advantage of Windows 95 over previous DOS and Windows releases. Its ability to deftly handle swapped network interface and drive controller cards (etc.) should be a boon for PC network administrators who today find that a downed Windows 3.x system takes an inordinate amount of time to reconfigure and set back up again.

Macintosh System 7.5 has also made giant strides in reliability in our tests. We kept careful logs of our Macintosh crashes, and one crash a week or less is the apparent norm now that we've upgraded to the latest 7.5.1 update, as opposed to our previously higher number of crashes. We've read horror stories in recent issues of *MacWeek* about alleged System 7.5.1 freezes and glitches, but our tests simply haven't borne out these stories. The chart tells the whole story. (See chart.)

We'd heartily recommend upgrading to System 7.5.1. It has dramatically increased the stability of our Mac systems. ❑

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Sex, Drugs and Rock ‘n’ Roll?

The Subliminal Messages in Windows 95

BY BOB LOBLAW

One of the side-effects of performing seemingly endless tests of beta versions of Windows 95 is that you get to spend a lot of time staring at its startup screen. During one particularly long late-night session, my mind wandered and I began to see pictures in the clouds.

After the installation was complete, I noticed that, on the Windows 95 CD, there was a directory called FunStuff that contained a version of the title screen that was slightly different than the Win95 startup screen. By comparing these two versions, I began to see differences in the two that clearly showed that the startup logo screen had, in fact, been heavily retouched. After careful examination of these two screens, I am now convinced that the Windows 95 logo screen contains at least four subliminal images.

The Dark Horse

The one that most people can see right off the bat is the silhouette of a dark horse rearing up on the left side of the Windows 95 logo in the file called LOGO.SYS (which, despite its name, is simply a bitmapped image that can be loaded and viewed in Paint. Set the horizontal scale to 170 percent for a proper aspect ratio.) As further evidence of the horse's existence, a completely different image of a galloping horse appears in approximately the same position on the Win95 bmp image (its tail and rear leg are at the left edge of the screen, its head is inside the blue rectangle). Coincidence? I think not. The meaning(s) of this image are open to interpretation, but the powerful image of a stallion, the phrase "dark horse," and drug-related associations are all well-known symbols.

Freedom

While you're looking at the Win95 bmp image, it's worth noting that there appears to be a large, dark bird with outstretched wings above and to the right of the logo. Flying and freedom, we presume, are the messages here. Or is that a vulture? A different, more positive, bird shape appears in the logo.sys image, as a white bird soaring in the upper left corner of the screen. Its head, beak and tail are all quite obvious. Its right wing extends off the top-left corner of the screen, while its left wing flies behind the red dots in the logo.

The Rock Hero

On the right side of the logo, there is a design that, in one concise image, manages to conjure up suggestions of the passion and excitement of rock music, death and drugs — all powerful and typical subliminal images. If you imagine that the upper-right corner of the Windows logo points to the back of a guitarist's neck, you can see that the guitarist has curly hair, a moustache, a clearly visible frilly collar, and is playing with his head back and his elbow at approximately the area where the green and the yellow rectangles meet. With a little more effort, it's not hard to imagine that this afro-haired, mustachioed guitar hero could be none other than Seattle-area rock legend

Continued on page **29**

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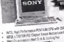

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Microsoft Win 95 Strategy Courts Corporations

BY GEOF WHEELWRIGHT

Microsoft knows that corporate users of Windows 3.1 are not automatically going to move to Windows 95 just because the company tells them to.

It's the biggest move Microsoft has ever sought from its users, asking them to move from a five year-old 16-bit operating environment (running on top of the 14-year old often-updated MS-DOS operating system) to a new 32 bit operating system offering only a tiny fraction of the "native" applications users can find for existing versions of DOS and Windows.

Big Hurdles For Windows 95

At a recent Windows 95 workshop in Redmond, WA (home to Microsoft's worldwide headquarters), the company laid bare the extent of the concern it has heard from users in the corporate community, as well as its strategy for allaying those fears. According to Steven Guggenheimer, one of the Microsoft Windows 95 product managers in charge of the company's corporate migration strategy, there are a number of major hurdles to the adoption and deployment of Windows 95.

The first is a deep concern about product reliability and stability. Managers of corporate computer systems tend to be somewhat conservative creatures and have learned through many years of bitter experience that there is a price to installing Version 1.0 of any new software, let alone a complex, 32 bit operating system that is going to interact on many levels with all your hardware, applications and utilities.

Those who were amongst the early adopters of Windows 1.0, Windows 286, Windows 386 and even Windows 3.0 have good reason for this caution. Many aspects of each of those previous versions of Windows were definitely "not ready for prime time."

Hand in-hand with these concerns about reliability and stability is a worry about compatibility. Having gone through the painstaking process of getting their existing Windows 3.x applications running exactly the way they want, many corporate users have told Microsoft they are extremely hesitant about any environment that could be incompatible with those applications.

Changing operating systems can also be highly time-consuming. Even if everything goes right the first time out — and you are installing from a CD ROM rather than tediously feeding floppy disks into your system — it is not unusual to spend half an hour or more getting preview copies of Windows 95 up and running. Once you factor in the many potential problems corporate users might encounter during this installation (particularly on older hardware) and the sheer number of systems in a corporate site that represents a significant number of "person-hours" that would have to be set aside for this purpose.

Even when Windows 95 is up and running on systems at a corporate site, there will also have to be people within the corporation's systems support department that will be required to help end users with any troubles they might having in running the new operating system.

These people will need training if they are to be any help to end-users. And training the trainers will require time, money and a re-allocation of resources (as they will not be available to provide support while they are off being retrained to support Windows 95).

Addressing The Bottom Line

There's also a clear bottom line issue that has to be addressed in all this. No corpora-

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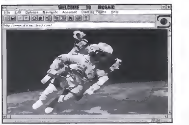
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We'll be looking at a trio of the latest offerings from some industry big guns: Microsoft, Claris, and WordPerfect. Each of these products offer the standard Windows WP/Spreadsheet/D Base engine, packaged with some individual enhancements and enticing extras. Despite the fancy packaging claims of "everything you'll ever need," each program harbours its own distinct little Works world.

Microsoft Works 3.0

MS Works provides a Microsoft Word-like word processor, an Excel-like spreadsheet, a database manager, and a communications terminal. As with all the products reviewed here, each component uses common tool and button bars for shortening the learning curve. Compu-rookies will appreciate the built in aids such as "WorksWizards," which almost automatically creates professional looking letterheads, reports, and other common documents, and "AutoStart," a series of templates providing a full range of pre-formatted WP, spreadsheet, and database selections.

The MS Works word processor is a snap to operate, with more than enough features to satisfy everyone but DTP professionals. It includes a small clipart selection (very small), a simple drawing and graphics component creatively titled MS Draw, and a nifty utility called WordArt that permits the user to angle, extrude and generally mutate text. In addition it boasts a 100,000 word spell checker, a 200,000 word thesaurus and a toolbar that may be customized to organize common tasks like spacing, font appearance, etc.

The spreadsheet module is complemented with a charting utility that offers 12 chart types, ranging from a basic bar to fancy 3-D pie and area charts. It permits the importation of any Excel file but will only import older (.wk1 format) Lotus 1-2-3 files. This is one area where Microsoft lags a little behind the competition, yet importing compatibility notwithstanding, the MS Works spreadsheet/charting module will adequately service the needs of most home users.

The MS Works database segment is also quite user friendly, with fully customizable reporting options. Indexing and query tools are easy to use and reports can be formatted quickly with the word processor (or WorksWizards/AutoStart templates). The communications module in MS Works is the only one of the three products that manages to evade the abysmal Windows "Terminal" program – instead, Microsoft has thoughtfully included a simple, integrated communications package that offers (hip hip hurray!) Z-modem file transfers. The bonus add-on package of Microsoft Money 3.0 is a nice perk that will handle all the accounting requirements of any home (and many small businesses).

Microsoft Works 3.0 ran very quickly on a 486 DX33 with 8 MB RAM and presented nary a bottleneck or problem. Not surprisingly, the interface meshed seamlessly with the Windows operating environment and showed no signs of hogging system resources.

What Works?

- Program is smooth and seamless
- Comm program is the best of the three.
- Does not hog system resources

What Doesn't?

- Won't import latter-day Lotus 1-2-3 file formats

Coming: MS Works for Windows 95
Microsoft says that a 32-bit version of MS Works will ship within a month or so after Windows 95. Like 3.0, the new version will include many Task Wizards.

ClarisWorks 3.0

ClarisWorks 3.0 is just plain different from the other two packages offered here, perhaps because it inherited its look and feel from the Macintosh product. It offers the same core word processor/spreadsheet/database capabilities as the competition but it seems to do it all in its own unique way. In some respects this is a good thing, in other respects not.

The CW interface can best be described as elegant, and as a matter of fact, the word processing utility doesn't feel like a word processor at all. It is more like a drawing program (which it is as well), complete with a graphically represented (CorelDraw like) shadowed page. Button bars are referred to as "Shortcuts," and are sparse and unlabelled with no pop up descriptions like the other two programs, but the spreadsheet and database modules take the term "uncluttered" to whole new levels. If you're into using tool bars and buttons, then ClarisWorks is not the program to choose. This clean sheet of paper approach forces a tougher learning curve on the user because it forces one to memorize hot key combinations or deal with the more cumbersome pull-down menus.

Once a modicum of hot-key proficiency has been attained, the various modules work well, if a tad slowly, along their intended paths. The CW word processor is capable of producing highly stylized documents that surpass the requirements of most home users, and features a spell-checker and 660,000 word thesaurus to keep typos to a minimum. A small clipart selection is supplemented with a very good draw/paint program. The spreadsheet does its thing

Continued on page 74

You Can't Avoid Rules and Regulations

Do you think that our business environment is over regulated with government red tape? Most small business entrepreneurs do. They think that many regulations are intrusive, arbitrary or overly bureaucratic, and result in excessive administrative hassles and unnecessary time, stress and expense.

For better or for worse, the reality is that regulations are a fact of life — and here to stay. It is important to know why these regulations exist and how they operate, so that you can deal with them effectively, and not be taken by surprise. Foreknowledge will provide you with confidence and peace of mind.

In all communities in Canada, there are public laws that regulate the operation of a business. These regulations may be set by local, regional, provincial or federal governments. In addition, there may be private regulations that impact on home business operation.

For example, federal regulations that may affect your home business include building codes, health, safety, product safety, customs duties, sales tax, GST, trade practices, and payroll deductions. Provincial government regulations that impact on home business would include matters dealing with sales tax, building codes, workers compensation, employees safety, health, trade practices, etc. In addition, municipalities have the authority to establish their own zoning bylaws regulating home based businesses. Some are restrictive and others are liberal.

Zoning Regulations
Home-based businesses are covered under the residential category and referred to generally as "home industries" or "home occupations." Local government officials take various considerations into account when dealing with the issue of home-based businesses. Most of the common types of local regulations relate to the issue of control.

These include, for example, control of nuisances such as noise, smoke, and odor, unsightly garbage or junk on the premises, regulations governing employees at home, congestion, noise or parking problems, signage or advertising on the premises, types of businesses allowed, the amount of space that can be used for the business, storage of inventory, manufacturing, entrances and exits.

Many local governments require that a business take out a licence to operate. Some smaller communities do not require this. More enlightened municipalities encourage and foster home business activity as an incubator and catalyst for entrepreneurial energy and creativity and the related economic growth that occurs in the community. This is a positive trend.

Building Regulations
If you are going to make any modifications or additions to your house, you should enquire as to whether a building permit is required. Local building regulations may also involve electrical, fire, health, plumbing and other types of inspection.

An interesting statistic: In many metropolitan and urban centres of Canada, about 25 percent of all new houses have a home office built in, due to consumer demand.

In addition to regulations imposed by the various levels of government, there could also be private regulations. Some of the common ones are:

- Residential tenancy agreement. The terms of the written agreement between you and your landlord could forbid operating any business out of the house, apartment or condominium.
- Condominium bylaws. The bylaws of a condominium development, as well as the rules and regulations, could restrict any business activity by owners or renters of the unit.
- Restrictive covenants. If you bought a house in a subdivision, it is common for restrictive covenants or building schemes to be registered against the title to the residential property by the developer. There could be a restriction prohibiting any business from being operated from the home, and though local government would permit the operation of a business, private regulations take precedence.

Before starting out, you should get the facts on all these regulations to see how they affect you. You can do so anonymously. Then you'll be in a better position to plan your activities. ❑

Douglas Gray, LL.B., is a Vancouver-based speaker, lawyer, columnist and author of 14 business books plus a real estate investment software program. His books include *Home Inc.: The Canadian Home-Based Business Guide* and *The Complete Canadian Small Business Guide* (both by McGraw-Hill Ryerson), *Start and Run a Profitable Consulting Business* and *Marketing Your Product* (both by Self-Counsel Press).

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Corporate Case for Win 95

Continued from page **23**

tion is going to make the significant investment required to deploy Windows 95 if there is no clearly-identifiable set of benefits that will follow A proper business case must be made for making the move, one that shows exactly how efficiency will be improved, how a better set of software tools will be made available to employees and/or how significant system performance enhancements will help the bottom line.

The cost of training end-users has also shown itself to be an issue Most corporate Windows users took long enough to move from DOS to Windows that there is a certain nervousness about now asking them to step up to Windows 95

Finally, corporations have told Microsoft that they do not want to put in the time and effort required to upgrade to Windows 95 if there is not quickly going to be a significant base of proper, 32-bit Windows 95 applications to exploit the power of the operating system.

Those who have been burned in the past by experience with the late 1980s version of OS/2 produced by Microsoft and IBM — and even last year's IBM OS/2 Warp — are likely to be a little more cautious about any claims that they should jump to a 32-bit operating system on the promise of future support for it.

Microsoft's Answers

Microsoft, of course, has some pretty extensive answers to these concerns The first — and biggest — answer it has lies in the extensive beta testing period it has allowed for Windows 95 By the time it ships, Windows 95 will have been under test with more than 50,000 users for almost two years, and with another 400,000 users (who signed up for the Windows 95 Preview Program) for around five months

If Microsoft can't get most of this product right after getting feedback from almost half a million people — and years of its own internal research and testing — then the company ought to go back to producing software classics like Microsoft Multiplan and Microsoft File for the Mac

Crucial to this testing process has been the involvement of legions of software companies that have been testing their existing applications with Windows 95 and readying new Windows 95-compatible, 32-bit applications for release within a month or two of Windows 95 shipments in late August or early September.

Compatibility issues, meanwhile have also been addressed by having a pretty rock solid 32 bit implementation of MS-DOS sitting within Windows 95 It is so solid, for example that if you get Windows 95 to boot up in MS-DOS mode ➤

July/August 95

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it will actually run Windows 3 1 without any perceivable problems

Being able to run Windows 3 1 from within a 32 bit version of MS-DOS should give further comfort to those concerned about backwards compatibility or who do not want to move to the Windows 95 interface right away

Gates Primes The Market

Microsoft has also brought out the big guns to prime the market for Windows 95 Chairman and co founder Bill Gates, for example said in mid-June that some 45 original equipment manufacturers (OEMs) had already licensed Windows 95 at that point and that many more licensees were expected

He also reiterated the many and varied co-marketing arrangements Microsoft has established in recent months during the run up to the official Windows 95 launch, including the "Windows 95 World Tour" co-sponsored by Compaq and NEC, the Windows 95 Information Systems Tour with Compaq and HP, the Windows 95 "sneak preview" tour with AST, and the Windows 95 satellite TV training broadcast (known as "Teamcast") in conjunction with Dell Computer.

Gates says that at least 75 independent hardware vendors (IHVs) will soon ship Plug and Play devices for Windows 95 while at least 53 independent software vendors are expected to ship applications for Windows 95 shortly after its launch

He further asserts that Windows 95 has been in big demand by software developers "from Day One," with something like 3,000 developers signing up at the operating system's original announcement Gates says Microsoft itself has spent more than US$70 million working with developers at more than 200 events to help get them ready for the launch "It is quite unique in the industry " he says

Gates suggests that one measure of Microsoft s support for developers lies in the number of Windows 95 beta copies, preview copies and tools it has shipped on CD-ROM "We ship millions of CDs out to people " he explains. "It is more than (is shipped by) any recording artist in the world "

Microsoft's Advice For The Would-Be Adopter

One of the CD ROM packages Microsoft has produced for those corporations considering a move to Windows 95 is its "migration planning kit " This CD is stuffed with advice on ideas on how — and why — to plan a move to Windows 95

A sample "Many leading industry analysts have developed independent assessments of the impact of Windows 95 on corporate operations," reports Microsoft in one of the presentations on this CD "The reports of two notable firms, Gartner Group Inc and Usability Sciences Corp , are discussed to assist rollout planners in understanding specifically how Windows 95 reduces the total cost of ownership for a personal computer in your organization Two published reports are available, describing the cost of migrating to Windows 95 from Windows 3 x and the effect of Windows 95 on the total cost of ownership of a personal computer."

Microsoft keenly reports the Gartner Group s projection that a typical organization will earn back the cost of migrating to Windows 95 within three to six months, based on support cost savings alone. The report calculates that Windows 95 costs $1 180 less per user to run than Windows 3 1 so that over five years organizations will save nearly $6,000 per user

Microsoft also quotes the "Cost of Migration" study done by the Gartner Group where it demonstrates that organizations apparently benefit substantially through decreased costs by planning their deployment of Windows 95 In fact, the report says that by planning the traditional labor intensive operations (for example, the installation process), an organization could realize costs of migrating to Windows 95 that are less than the average upgrade cost from Windows 3 0 to Windows 3 1

Meanwhile, Usability Sciences Corp (an independent usability testing group) performed a study on how users are affected by moving to Windows 95 Their study included 75 existing Windows 3 1 users with varied levels of skill in performing common tasks

This study found that after testing users on Windows 3 1 on specific tasks and then allowing them a 20-minute "play" period with Windows 95, the same users were almost as fast under Windows 95 in performing comparable tasks as they were in Windows 3 1 It reported that within 1 5 hours of first using Windows 95, the existing Windows 3 1 users performed

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MS Win 95 Courts Corps

*Continued from page **27***

operations nearly twice as fast as they did on Windows 3 1

So Microsoft rebuts the idea that extensive user training is needed "Since all tests in the study were performed using the computer-based training (CBT) module that comes with Windows 95 the results demonstrate that lengthy training sessions are not necessary " suggests the company

As if to emphasize this point, Microsoft reports that some 70 per cent of corporate users who signed up for the Windows 95 beta and preview programs say that they plan to deploy it when it is released in August The company admits, however that this number is probably not typical of the corporate community at large since those who have invested the time and energy to work with early copies of Windows 95 will naturally want to deploy it

Conclusion

Microsoft knows that corporate migration to Windows 95 will be the "make or break" yardstick for the success of the operating system It does not want to repeat the mistakes that were made during the late 1980s in the original IBM/Microsoft attempts to bring OS/2 to market as the natural successor to MS-DOS

The biggest problem with the OS/2 of the late 1980s was that there were very few native mode applications available for it until long after the operating system had initially shipped. That fact, coupled with problems in running some DOS applications, left users with few compelling reasons to switch from DOS (It also probably didn't help matters that IBM and Microsoft announced OS/2 and the IBM PS/2 hardware family on April 1 — hardly a day on which to take anyone seriously).

All of this explains why Microsoft is worrying so much about getting a huge swell of applications and supporting hardware to market within a few weeks of Windows 95 itself shipping (and even some of it beforehand in the form of "preview editions" to work with existing beta and preview copies of Windows 95)

But if advance orders for Windows 95 — and the huge breadth of support it appears to already enjoy from every major sector of the PC industry — are anything to go by Microsoft really doesn't need to be too worried ❑

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Subliminal

Continued from page 21

Do you see it?

Jimi Hendrix. The fact that he's a local (dead) hero only adds to the plausibility of the rock hero tribute theory. Or could "rocking" and "horse" be related?

Subliminal Sex

Not convinced about that one, eh? Well, the largest image is the most obvious and potent image of the bunch. Like all good subliminal messages (especially those that have already been shown to contain references to power, drugs and rock and roll), this one is about SEX. Look above the Win95 logo and imagine that the blue area behind it is the left profile of a man's head. Above the upper-left corner of the logo is the man's cheek and eye, defined by a dark area about an inch above the upper left corner of the logo. Just to the right of the white bump in the clouds would, of course, be the point where the forehead and nose meet. His forehead and hair are defined by the white clouds at the very top of the screen. At the top-center of the screen is his sideburn, and to the right of that, his ear. His chin, therefore, would be at about the point on screen between the large red rectangle and the two smaller ones.

Naturally, this male figure is poised in a classic missionary position over the figure of a female figure, her head back (her neck extends from the bottom left of the logo through the letter "s" in "Microsoft"). She appears to be laying on a pillow, her "Princess Leia" hair defined by the white area at the center of the left edge of the screen. The bridge of her nose, therefore, is seen from above and to the right of her head, the bottom of her chin is approximately where the black dots between the blue and the red areas of the logo are. That would make the large bump on the right side of the logo her... well, you figure it out.

Is this just a wacky theory, or are we onto something here? Have we missed anything? What happens if you play the files backwards? Is Elvis alive? Is Paul dead? Let us know at editorial@tcp.mindlink.bc.ca ❑

Bob Loblaw was going to provide us with an author's bio, but he suddenly had to leave. He said something about needing to buy nine more copies of Microsoft Windows.

Conversation with Microsoft Canada's Chief

BY DAVID TANAKA

We had an opportunity to spend a few minutes with Microsoft Canada's general manager, Frank Clegg, in early July. Needless to say, the imminent release of Windows 95 was the main topic of discussion.

TCP: ***Will Windows 95 ship as scheduled on August 24?***

Frank Clegg: Absolutely! We've always said we'll ship a quality product, but right now it's on schedule. We're on our third release of the beta; the preview program is out to over 400,000 people and the code looks very, very solid.

TCP: ***How many copies will be available in Canadian retail stores on that date?***

FC. We're not estimating how many (but) we are gearing up production to be able to meet all the orders. This will not be a constrained environment. We're designing this so that we will be able to have 100 percent fulfillment of the orders.

TCP: ***Has the retail pricing been set?***

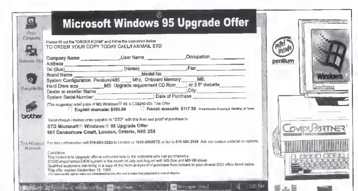
FC. The retail price is $149 (upgrade) and $289 for the full retail product. But as you know, our business partners will decide what they want to set that price at.

TCP: ***How many third-party developers will be releasing Windows 95-ready products within the same time frame as the Win 95 release?***

FC. I'm not aware of a number, but I do know from a hardware and software standpoint, we will have far more people shipping Windows applications within 30 days than we did for MS-DOS 5.0, than we did for Windows 3.1 or Windows for Workgroups. If you go back to Windows 3.0, there really was only us and a lot of people had plans for it. With Windows 95 there's going to be all our major competitors. Our expectation is that it's going to be higher than anything we've ever done before.

TCP: ***When will we see Windows 96?***

FC. The strategy is twofold: we'll have an update release every year, and have every second one [represent] a major release change. The plan is to have Windows 96 be a significant update release, but not be a huge new release of the product. ❑



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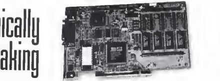
TCP Labs Survey Of Windows Graphics Cards

Graphically Speaking



BY JEFF EVANS

Looking at the PCs currently advertised in computer magazines and newspapers (and the scores we've tested in this lab), excellent quality, affordable and easy to use graphics are now available to every PC user. It's hard to overemphasize what a change this is. For a couple of hundred dollars, today's PC user can get graphics speed and image quality equivalent to that of a 1985 vintage Targa board which, back then, cost $11,000!

The normal, 1995 version of the entry level PC graphics card supports a screen display of at least 1024 by 768 (measured in "picture elements" or "pixels," the individual dots that make up an image on the computer monitor). Most cards now come with at least 1 MB of RAM on board, and, with the correct video monitor attached (see the monitor survey in last month's issue of *The Computer Paper*) will allow the user to view a "true-color" image (selecting from any of 16.7 million colors) at a VGA level resolution (640 by 480 pixels).

At higher resolutions, depending on the card and the amount of video RAM it has on it, you may be able to choose from 16.7 million color (24-bit), 65,000 color (16-bit), 256 color (8-bit) or 16 color (4-bit) palettes, at resolutions as high as 1280 by 1024 pixels.

Many cards come with software that allows you to change display options with a few clicks of your mouse. Some allow you to scroll around extremely high resolution "virtual desktops" (pretending to have a working screen with resolution far higher than the monitor can display) to allow you to manipulate extremely large spreadsheets, detailed documents, hi-res graphics, or technical drawings.

All current PC cards come with a standard Windows driver that, at least theoretically, will allow you to view any Windows program. Some have additional specialized driver software to give optimum performance with AutoCAD or various DOS programs, or compatibility with OS/2.

We're Looking For A Few Good Chips

Although there are a huge number of graphics card brand names, the vast majority are based on chipsets made by a few chip suppliers. Cirrus Logic is the market leader in supplying very low-cost, decent quality chip sets for budget PC graphics cards. CL-based cards are extremely common in the low to mid-range offerings of PC clones.

If a well priced computer in an ad doesn't specify what graphics card is being offered with it, it more often than not is a CL-based card. Our experience with Cirrus Logic based cards is that they are not the fastest, but for many PC users with ordinary needs, they are entirely acceptable. Most of the other graphics cards manufacturers use chips from S3, Tseng Labs or Weitek, which often offer superior speed, but at a higher price.

The Canadian Connection

Canada is a world leader in the graphics card business, mainly due to two extremely inno ➤

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vative firms Thornhill Ont based ATI Technologies, and Montreal based Matrox. Unusually these companies design many of their own graphics processor chips This ability to innovate on the fundamental technology level has been a large part of their success

A few companies appear consistently on the Editors Choice lists of computer industry publications, and Matrox and ATI are in that select group more often than not Other noted high performance card makers are Number Nine, Diamond Multimedia Genoa and Miro

Standard Issue

Most of the time as novice PC or Mac purchasers we buy our first graphics card by default — we simply get whatever graphics system is in the computer at the time of purchase Often we don t even know what questions to ask.

In the case of many Mac users, involvement in graphics card purchases never goes any further Many Mac models come with a graphics subsystem built in often at the motherboard level and it s 'good enough" for the average user's needs End of discussion. Optional Mac graphics cards tend to be more expensive than PC cards, and for various reasons the Mac graphics card upgrade market is smaller, pricier and more specialized than the Windows graphics card market. Hence the focus of this article is on Windows graphics cards

In the case of first-time PC users, unless you insist on something better (and are prepared to pay for it) you will usually get a cheap, decent but unexceptional Cirrus Logic based card or something similar For a great many Windows PC users this is all they'll ever really need If you want better performance there are no magic solutions, you'll get what you pay for

What To Look For In A Graphics Card

The first thing to look at is the computer the card is going to go into If it s a new computer then it probably has a VL local bus or a PCI bus Current graphics cards are generally available in either VL or PCI versions, although vendors report that VL is declining rapidly in favor of the faster PCI bus If it s an older computer, you may have to look for an ISA bus compatible card.

Few manufacturers are concentrating on ISA cards anymore for reasons outlined below PCI cards are typically 5 10 percent faster than VL versions, and both are much faster than ISA cards since both the VL bus and the PCI bus transfer data at much higher speeds Virtually all current Pentium based PCs have PCI buses and many of the faster 486 models do as well The high performance graphics card market will probably be almost exclusively concerned with PCI products by 1996

Next, consider the amount of on-board RAM the card should have The standard for entry level graphics cards is now 1 MB Cards with 2 MB, 4MB or even 8 MB of on board RAM offer higher resolution display options with more colors, and faster speed There are two kinds of RAM used on graphics cards DRAM, the same kind of RAM chips that you have on the main system board of your PC and VRAM a variety of RAM that is optimized for high speed video operations. DRAM chips have only one port for data input and output, so they can't do both functions at the same time Hence they are slower VRAM chips have two data ports and can input and output data simultaneously resulting in faster operation Expect to pay about $50-$80 per MB of extra DRAM and about $100-$125 per MB of extra VRAM

➤

The End Of The Graphics Card?

The graphics card market came into being due to the need to offload processing tasks from the main CPU, and to provide different levels of graphics performance for different users' needs Increasingly, however, a high level of graphics performance is the norm, and is no longer very expensive or exotic According to Frank Squizzato of Forefront Graphics, a long time expert in PC graphics solutions, in the future PC graphics will increasingly be built in on the main board of computers (the traditional Mac approach) but in addition to being very powerful and very cheap the graphics subsystems of future PCs will be easily upgradeable "If you need, say, video digitizing capability, or full motion video playback," he says, "It'll be obtainable through an upgrade chip or a small module " Squizatto looks ahead to a time when separate graphics cards are a thing of the past where high level graphics display capability is simply a built in feature of every form of information/communications system "We'll still have lots to do in terms of system integration " he laughs "but graphics will increasingly be a no-brainer" ❑

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Not Quite Plug N Play

Most of the graphics cards we surveyed had fairly simple installation routines but the manuals often start with warnings about hardware conflicts and incompatibilities, and tips on how to work around them. In general a new, plain vanilla standalone (non networked) PC will offer the fewest surprises to the installer, while an old PC with a weedy hard drive unique personalized touches and much modified obscure and mysterious hardware components may provide hours of problem-solving fun before you get the thing working again Similarly the more complicated the hardware configuration (e g network cards video digitizers extra drives) the more likely you are to run into conflicts. The problem is that existing operating systems and hardware devices haven't been developed to allow the components to talk to each other and optimize their cooperative performance

With the release of Windows 95 some time soon a concept called Plug And Play will begin to become real. Hardware devices that conform to the Plug And Play standard should have the built in smarts to automatically talk to each other and to autoconfigure themselves for optimum performance without requiring much skill or intervention from the PC's user Most major manufacturers such as ATI have prepared products for the approaching Windows 95 universe though they are reluctant to release them until the final release of Windows 95 has taken place Some Plug And Play monitors are already on the market

The Contenders

We contacted the major manufacturers of better quality graphics cards and their Canadian distributors and received about 15 graphics cards in time for this survey While not totally comprehensive, it should give a reasonable picture of the current state of price/performance for Windows graphics cards.

ATI Thornhill, Ontario based ATI Technologies, Inc has been one of the world leaders in mainstream graphics accelerators for many years and they consistently show up in computer industry awards in the Windows graphics card market ATI has experienced some troubles over the last few years with delays and cancellations to announced products However, the current line features extremely fast ATI proprietary chips, flexible and comprehensive utility software and generally easy installation.

ATI Graphics Pro Turbo

ATI Graphics Pro Turbo (VL/2MB, PCI/2MB and 4MB) This product comes in versions with 2MB and 4MB of VRAM, and in VL and PCI bus versions The 64-bit ATI mach64 chip provides extremely good performance, and included software utilities provide useful options for color correction (essential for accurate professional graphics creation) brightness, tint, contrast, color control and a virtual desktop These cards provide image output with resolution up to 1600 by 1200 and refresh rates up to 100 Hz.

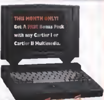
ATI Graphics Xpression

ATI Graphics Win Turbo and Graphics Xpression These cards offer slightly lower feature sets (and lower prices) than the Graphics Pro Turbo. 64 bit processing, but only 1280 by 1024 graphics instead of 1600 by 1280 and in the case of the Graphics Xpression 1MB of DRAM while the WinTurbo offers 2 MB of VRAM Both cards offer the extensive ATI utility software

ATI Graphics Ultra Pro This 32-bit accelerator card offers reasonable performance at a low price but is being superseded by its 64-bit siblings. Nonetheless it was easy to install and with software support for NT OS/2 UNIX and CAD was a good flexible entry level product

Actix Picasso PCI Series The two models tested were decent Windows accelerators, somewhat less fully featured than the ATI products but offering mid range performance at a relatively low cost.

Genoa Phantom 64 Genoa offered to cooperate in our survey, but the model ➤



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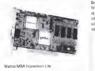
we tested was rather long in the tooth having been on the market a couple of years. In a product category where one can go from leading edge to obsolete in less than a year The company claims that a new generation with much more capable performance will be on the market soon



Matrox MGA Impression Lite

Matrox This Montreal based company formerly concentrated on the expensive high end graphics market, where it competed with other high end product lines, like the Truevision Targa boards Over the past five years or so, however, the company has dropped prices and added new products to allow it to compete in the mainstream PC graphics market The Matrox MGA Impression Plus/Lite was a very well-designed easy to install unit

Miro This German based company has not really taken on the mainstream graphics card makers in North America head to head Instead it has added unusual features to its graphics products, allowing it to work well in specialty video applications. The miroVIDEO 20TD live! card offers an extremely impressive mix of standard Windows accelerator functions plus full screen accelerated video MPEG playback software, Windows AVI video editing and playback, full motion and still image video capture, and a 200+ channel TV tuner It brings full featured digital video to your PC as well as providing standard graphics display Installation was remarkably smooth and easy A wonderful product.

Number Nine Imagine 128

Number Nine One of the earliest makers of graphics accelerators for the PC, Number Nine has, like Matrox, rapidly moved into the mainstream in terms of pricing The results with the three models we tested are very high performing cards, and in the case of the Imagine 128, one of the fastest high resolution accelerators on the market, though at a price that makes it most attractive to the professional graphics or CAD user

Radius Another One That Got Away: Radius, one of the most respected names in Mac graphics announced an ambitious line of Windows graphics accelerator cards We looked forward to receiving the models that were promised but after many delays we were informed that Radius had decided not to enter the PC graphics card market and the products had been shelved No specific reasons have been given, but the natural suspicion is that the low-margin extremely competitive PC market may be an unattractive challenge for hardware designers more used to the less crowded, higher price and higher margin world of Mac third party products

And The Winners Are...

The **ATI Mach64 Graphics Xpression** (PCI with 2 MB of VRAM) is the Editor's Choice Best Buy This ATI model represents excellent Windows applications graphics acceleration at a mainstream price Its easy installation and attractive additional features make it an unusually good value either as an upgrade to an existing system or an option for a new PC.

The Editors Choice High End Graphics Accelerator is the **Number Nine Imagine 128** (PCI with 4MB of VRAM) Although expensive enough to scare off many mainstream Windows users its superb feature set — exceptionally high quality fast, high resolution display output — makes it a highly productive choice for professional CAD graphics and desktop publishing

The Editors Choice for Desktop Video is the **MiroVIDEO 20TD Live!** This card provides very good graphics accelerator features, plus a host of digital video features supplied via its extremely comprehensive and well-engineered hardware and suite of included software utilities For any PC user who wants to enter the world of consumer level desktop video this is great value and great fun combined ❑

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Bit Path:	64-bit	64-bit	64-bit	64 bit	64-bit	64-bit	32-bit	32-bit	64-bit
Plug & Play:	No	No	Yes	Yes	No	No	No	No	N/A
RAM:	2 MB VRAM	2 MB VRAM	2 MB VRAM	4 MB VRAM	2MB	2 MB	1MB DRAM	2MB DRAM	2 MB DRAM
Resolution/colors:*									
1024 x 768:	65K	16.7 Million	16.7 Million	16.7 Million	65K	65K	256 colors	65K	65K
1280 x 1024:	256	16.7 Million	16.7 Million	16.7 Million	256 colors	256 colors	N/A	256 colors	256 Colors
1600 x 1200:	N/A	N/A	256 Colors	65K	N/A	N/A	N/A	256 colors	256 Colors
Refresh Rates (Max/Min):	43-75 Hz	43.5-100 Hz	43.5-100 Hz	43.5-100 Hz	43-100 Hz	43-100 Hz	70-90 Hz	43-90 Hz	43-75 Hz
Ease Of Installation:	very good	very good	very good	very good	good	very good	good	good	Good
Res. Change:	WinSwitch On-the-fly	WinSwitch On-the-fly	WinSwitch On-the-fly	Win Switch On-the-fly	FlexDesk	WinSwitch On-the-fly	N/A	N/A	N/A
Drivers									
Other:***	OS/2, NT, AutoCAD	OS/2, NT, UNIX	OS/2, NT, UNIX, AutoCAD	Win NT, OS/2, UNIX, AutoCAD	OS/2, 3D Studio, AutoCAD	OS/2, NT AutoCAD	OS/2, AutoCAD	OS/2, AutoCAD	OS/2, Autodesk, NT
Expandability:	N/A	4 MB VRAM	4 MB VRAM	N/A					
Extras:	FlexDesk, DeskScan	Virtual Screen, pan and zoom	Virtual Screen, 2 monitor supp.	Video Accel, Color Cal	Virtual Screen, pan and zoom	FlexDesk			AnyView Pro S/W
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Bus	PCI	PCI	PCI VL	PCI	PCI	PCI	PCI	PCI
Chipset:	S3 Vision 864 86C864	MGA	ET4000, Tseng Labs/W32p	S3 Trio 64	S3 Trio 64	S3 Vision 968	S3 Vision 968	128-bit Graphic Engine
Bit Path	64-bit	64-bit	32 Bit	64-bit	64-bit	64-bit	64-bit	128-bit VGA
Plug & Play	No	No	No	No	No	No	No	Yes
RAM	1 MB	2MB VRAM	2MB DRAM	1MB DRAM	2 MB VRAM	2 MB VRAM	4MB VRAM	4 MB VRAM 5MB DRAM
Resolution/colors:*								
1024 x 768	65K	65K	32K at 72 Hz	256 colors	16M at 76 Hz	16M	16 Million	16.7 Million
1280 x 1024	256 Colors	256 Colors	256 at 70 Hz	N/A (Virtual Desktop, 256 colors)	256 at 72 Hz	256 colors	65K	65K
1600 x 1280	16 Colors	N/A		N/A (Virtual Desktop, 256 colors)	N/A (Virtual Desktop, 65K)	256 colors	65K	65K
Refresh Rates (Max/Min)	43-106 Hz	43-120 Hz	60-72Hz	56-100 Hz	56-100 Hz	56-150 Hz	56-160 Hz	100 Hz
Ease Of Installation	Good	Good	Fairly Simple	Very Good	Very Good	Very Good	Very Good	Very Good
Res. Change	N/A	N/A	N/A	Hawkeye Res. Exchange	Hawkeye Res. Exchange	Hawkeye Res. Exchange	Hawkeye Res. Exchange	Hawkeye Res. Exchange
Drivers: ***								
Other: **	OS/2, NT AutoCAD	OS/2 NT		OS/2, NT AutoCAD	OS/2, NT AutoCAD	OS/2 NT AutoCAD	OS/2, NT AutoCAD	OS/2, NT, AutoCAD
Expandability								N/A
Extras:	Virtual Desktop	PowerDesk, InstantAccess/WATCH	Vid Cap, Sdk; TV Tuner, MPEG	Pan, Zoom, Virt. D/T	Pan, Zoom, Virt. D/T	Pan, Zoom, Virt. D/T	Pan, Zoom, Virt. D/T	Pan, Zoom, Virt. D/T
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Animation and 3D For Home PCs

BY RON GEBLER

Animation and three-dimensional graphics software can be powerful tools for the PC user. Their graphical framework offers you an alternative approach to conveying information (or your particular message) in a manner that's direct and easy to understand. For instance, consider how they can be used to describe a detailed or dangerous procedure for training and educational purposes. Or clearly depict a marketing or business plan pictorially. The uses are limitless, ranging from videogames to information kiosks, from movie effects to sales tools and of course, much, much more.

The key point to remember is this — it moves and it has color, which guarantees, if not exactly a captive audience, then at least an inquisitive one, which in turn means you're getting your point across.

Many 3D graphic and animation applications have menu driven interfaces that allow you to approach your project in an organized, logical way. For example, first you decide on the shape and design of the object, then its movement path, and finally the background and how the object will relate to it.

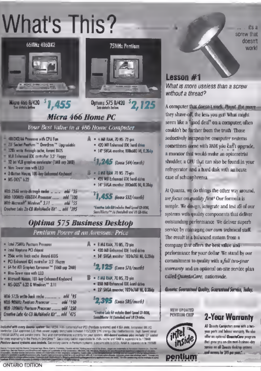
The Bouncing Ball

The best way to describe this is by example, so let's try out a quick sample project. We want a ball to drop and have it bounce once. Fairly simple, right? Let's see. First, we pick a basic shape to work with. Every program has a function that allows us to choose from a wide variety of three dimensional geometric shapes. We'll pick a sphere. What we have now is a wireframe model. This can be described as the 'skeleton' of our model and it is composed of lines that represent the X-Y and Z axes, creating the three dimensions that we see with our eyes.

The shapes formed by the intersection of these lines are called polygons and they'll help to map out the surface of our sphere a little later on. One last word on shapes is that more complicated forms (such as the human body) can be created by using a combination of simple shapes, customizing and manipulating them and then detailing how they interact with each other in terms of movement.

Next comes the part in which we detail and describe the movement path of our object. In the 'old days,' animation was made using a series of individually painted cels that were laid over a background and photographed with a motion picture camera one frame at a time. The basic process is the same today. What must be done is to move our object to the key points of movement. Since we are bouncing the ball, let's start it up in the air and call that Position 1. Now let's drag our object to the bounce point (touching the ground). That will be Position 2. Finally, we'll move the sphere to 'bounced up,' Position 3.

These positions represent vital points where movement takes place, and are called key frames. If this animation is one second long (24 frames), then the PC has the ➤



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Instructions that Position 1 is at Frame 1, Position 2 is at Frame 12 and Position 3 is at Frame 24. You computer calculates the coordinates and other information pertaining to the remaining frames.

This process is called tweening, an industry term from the word between, and a job once commonly held by human animators. You can now run the action and view it. If the movement seems too choppy or unnatural, add more key frames so the computer doesn't have to make so many assumptions about the sphere's positioning.

As the motion path is now smooth and complete, let's move on to color and lighting.

Menus will offer different types of surfaces with a variety of textures and refractive indexes and of course, different colors to fill in the aforementioned polygons. Choose lights now and decide on their colors as well as which types, such as spot, diffuse or ambient. Now place them around the object.

You can preview the lighting and see if it's what you like. Some programs can twist reality to aid to your creativity, offering such effects as lights which don't cast shadows, photographic filters, morphing effects and even more. Many accept additional plug-ins for even more effects.

Finally, decide where you want to place the camera to view the animation. Many applications offer as many cameras as you want and in some cases you can even plot out camera moves that take place during the animation.

The last operation to be done is rendering. This is the process in which your PC calculates all the formulas that will drive the different elements of the animation. This takes time. Sometimes, a long time. The more complex your objects and movements, the longer rendering takes. It takes some serious hardware, which is now only available to professionals with big budgets, to render "on the fly" in real time. Have faith and patience, though. It won't take long for prices to drop.

What Do You Need?

The hardware necessary to do basic 3D work need not be particularly fancy or expensive. The professional industry uses Sun and SGI (Silicon Graphics) workstations, but your PC/Windows, Mac or PowerPC platform will do just fine. You should have a good graphics accelerator card with a fast refresh rate and enough DRAM or VRAM (at least 2 MB, but the more the better) to handle all the constantly changing color and motion information. Aside from that, you can use a 486 based PC/Windows system or even an LC series Macintosh for creating 3D graphics and animation.

In general, though, you should be thinking about adding more RAM, faster processors and enough hard drive space to handle the large animation files. Now you can even purchase 3D graphic cards that will help to speed up rendering time.

The software that generates 3D graphics and animation can get pricey. There is some hope, though. If you buy certain 3D graphics or video capture cards, these programs come bundled at no extra cost. Some well known and respected programs are AutoDesk's 3D Studio and Animator Studio, Caligari's TrueSpace, Specular's Infini-D, Crystal Graphics' Topas and Newtek's Lightwave3D. Pricing starts in the region of $500 and goes up to — the sky's the limit.

A lot of these graphical applications have a basic menu driven interface that's easy to understand and use. It doesn't take very long to get started but you may have to spend some time reading manuals and experimenting if you want to utilize the more complex functions that are offered.

Finally, you must decide where you want your animation to be seen. For instance, if it's for video you'll need a video output (VGA to NTSC converter). Otherwise you can compress your animation (depending on its size) and store it to floppy disk, hard drive or even to CD-ROM.

The bottom line is that you must be an intelligent consumer and do a lot of comparison shopping. Find the program that has the tools and effects you need for your projects. Decide where you want to deliver your animation to. And don't forget to find the best price. Consider the time versus cost variable — Animations take a lot of time to create. Can you afford to spend the time working on them or would it be a more efficient use of your time to get a service bureau to do the job? If you've got the time, patience, money and perseverance to devote to a very creative way of expressing your ideas, consider these applications, they may work very well for you. ❑

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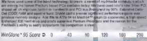

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Multimedia 95

BY KEITH SCHENGILI-ROBERTS

What started out as a photographer's show several years ago is gradually becoming one of Toronto's major computer trade shows and may now be second only to Comdex Canada. There was still a sizable contingent of camera-related gear at the show, but it definitely takes a back seat to the increasingly computer-oriented perspective of Multimedia 95.

Last year's show saw the real introduction of commercially-available, mass-appeal CD-ROMs onto the market. Multimedia 95 was the first show to showcase any sizable presence of the Internet — specifically the World Wide Web. Virtual reality games and systems are also becoming more commonplace and are definitely popular with the public as the long line-ups to play immersive combat and action games demonstrated.

Many of the vendors at this year's show were showing off their multimedia and Internet skills. What follows is only a small fraction of what was on diplay at the show.

ICE: Ideas the Changed the World

Ice Multimedia is a local Toronto firm that is beginning to make an impact in the multimedia market. A firm planted solidly in both the corporate and consumer worlds, ICE creates products and produces events in a variety of media.

Their first multimedia release produced in conjunction with Dragon's World Publishing is Ideas that Changed the World, a gem of a CD-ROM.

Beautifully designed and chock full of information, this CD-ROM is aimed at children interested in investigating some of the basic processes, tools and inventions that made an impact on our society. Based on a best selling book from Philip Wilkinson and Robert Ingpen, Ideas that Changed the World contains extra photos and illustrations not included in the published book, and includes several video clips and games. The elegant easy to use interface takes the user through the development of humanity's most important inventions and concepts.

Ideas that Changed the World is a CD-ROM to look out for at your local computer store.

Contact: Integrated Communications and Entertainment (ICE) 416-868-6423

Silicon Graphics' WebFORCE.
To Author and To Serve

Silicon Graphics was displaying its impressive hardware and software at the show. One of the more impressive displays was seeing WebFORCE in action. WebFORCE is a suite of programs that allow you to create and manage a site on the World Wide Web. WebFORCE's MIPS RISC-based microprocessors provide the sort of raw number crunching power needed to deliver information to hundreds of people on your Web site simultaneously. Some of the busiest Web sites, like Netscape Communications and HotWired, use WebFORCE servers. WebFORCE's software is powerful, and lets you create and link Web pages quickly and easily.

Silicon Graphics was also demonstrating the eye-popping displays possible through its implementation of Virtual Reality Markup Language (VRML) in WebFORCE. For VRML-capable browsers — which as yet are small in number — you can move through 3-D landscapes, or manipulate and visualize objects on-screen. WebFORCE is enough to make most Web authors drool in anticipation.

General Publishing
A Stowaway at the Show

At General Publishing's booth they were showing off Stowaway, an amusing — and somewhat gruesome — depiction of what life was like on a man-o-war back in the 18th Century. Aimed at kids, this lavishly illustrated CD-ROM is based on the successful "Cross-sections" series by Stephen Biesty. You travel through various cross-sections of the ship and explore the lives of the various crew members.

The CD-ROM proves that life on board a warship was hardly a pleasure cruise. Click on the cross-section and you will see the rats scurrying around the bread stores, wounded sailors being thrown overboard along with depictions of sailors enjoying their daily rum ration and then trying to sleep in their hammocks. The program contains over 400 screens, 200 animations and over 2 hours of audio.

There's also a simple game: find the stowaway. This title, along with the other Stephen Biesty CD-ROMs produced by Dorling Kindersley Multimedia, are great titles for parents looking for an entertaining and educational CD-ROM for their children.

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Never Mind The Budget, We Want Power

BY JEFF EVANS

We've all read the ads in the computer magazines and secretly longed to own the niftiest sounding Power User's system on the market. When it comes to wanting more computing power than any sane person really needs, many of us are guilty of committing several of the Seven Deadly Sins (Lust? Gluttony? Greed? Envy?)

We've tried, we really have tried, to be reasonable, sensitive, modest... downright Canadian in our attempts to curb the techno-lust that lurks within many PC users, and within virtually every computer journalist.

Although we've tried to encourage you, our readers, to ignore the hype about the latest and greatest (and most expensive) technology, in favor of "appropriate technology"— affordable, modestly performing products that meet current needs adequately — we suspect that, deep down, you'd at least like to kick the tires on the hottest PCs on the lot. So this month, let's just try to imagine what we might buy if we had an unlimited PC toy budget.

To make the process more respectable, we'll even describe the real world, actual business applications that these leading edge systems might excel at (when we aren't using them to play Doom, that is). If we want to persuade an unwary boss (or spouse) that we actually need to buy one of these Maseratis of the computing world, it helps to be able to put forward a business case for buying a high-end PC as a kind of fig leaf to cover our naked technomania.

We want our dream machines, we want them now, and we want them bad.

Great Expectations

In 1993, when the BAPCo consortium established a benchmark value of 100 for its SYSMARK 93 benchmark suite, the computer they used to set the performance standard was a then state-of-the-art Intel DX2/33 MHz based system with a fast graphics card and an unusually generous 8 MB of RAM. As we'll see in this survey, a similarly leading edge Intel Pentium-based system of today routinely cranks out a SYSMARK benchmark score of about 300. There's been an effective tripling of overall computer power in the last two years or so.

Whether we "need" all this power to write a letter is a moot point. For serious business applications like CAD, multimedia, digital video, voice recognition, digital audio, digital photography, simulation and VR, desktop publishing, and network server provision, the increase in PC performance and reliability is reshaping the way much of our work, play and education is conducted. This recent 300 percent increase in performance is not a solution, exactly, though it makes many new things possible. Rather it is a step on a path of computer evolution, whose possible consequences we barely understand.

Beyond Intel and Win3.1

In 1995, for the first time, there are a variety of real alternatives to Intel for high end PC users. Silicon Graphics' workstations (which include the computers used to create the effects in *Jurassic Park* and *Terminator 2*) are the professional's choice for 3D graphics and animation, Virtual Reality, and Computer Aided Design.

NEC Technologies has adopted the MIPS RISC processor as the basis for a line of high powered PCs that are used by Microsoft for developing Windows NT. Digital Equipment Corp., after spending over a billion dollars developing its Alpha chip, is finally seeing that effort pay off in powerful PCs, servers and workstations.

The other major partners in the PowerPC consortium, IBM and Motorola, are both bringing high-end PowerPC-based personal computers to market. One thing to note is that, although all of these platforms based on exotic processors can run regular Windows software in a kind of emulation mode, they are designed to run the Windows NT operating system (with

➤

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the exception of Silicon Graphics, which runs a version of UNIX) Windows NT is the core of the business case for the new RISC PCs.

Because of this multiplicity of choices for would be Power Users, this survey is composed of two sections. The first is a benchmark comparison of high end Intel-based Windows PCs from major Canadian suppliers with the usual tables of configurations and performance created with the aid of the BAPCo SYSMARK 95 benchmark suite

Part One: Pentium Contenders

AST Premmia GX P/100 Although equipped with "only" a 100 MHz Pentium processor, the P/100 gave very respectable Windows applications performance compared to other vendors offerings based on 120 or 133 MHz Part of its extra speed comes from a fast SCSI II drive Like other AST models the GX is very well engineered (video, serial parallel, mouse and keyboard connectors are on the main board freeing the maximum number of expansion slots for other duty) The P/100 comes network ready with network connectors built into the main board and network setup software preloaded The system is also fitted with anti theft hardware that allows it to be easily cabled and locked down This is a dream machine that is very well suited to practical office use while still offering plenty of sizzle

Comtex Mach 5 Pentium P5SCMS

The PC that Comtex sent was their latest top-of the line model Along with the Quanta 133 MHz system the Mach 5 is truly a leading-edge PC The system is configured for maximum performance It is based on the Intel Triton Chipset with optional EDO (extended data output) RAM a 1 6 giga byte enchanced IDE hard drive and a Diamond Stealth 64V PCI graphics accelerator card The system is very clean and well constructed, and performed flawlessly in all tests. It also performed significantly faster than any of the other systems, due to the combination of high-performance high-quality components Although it was the performance champ (and had one of the largest hard drives) it was somewhat more expensive than the second-fastest PC, the Dell XPS120 which led us to conclude that in terms of price/performance, the two are roughly equivalent If your budget for a dream machine is in the $5K range however this is a great choice

Dell Dimension XPS P120c.

Dell was one of the first of the name brand manufacturers to announce that it was shipping Triton chipset-equipped systems based on the Intel 120 MHz processors This fits well with Dell's reputation for hardcore "me first" technical excellence The XPS P120c comes in a basic configuration with 16 MB of RAM and a 1GB hard drive for about $3 975, but there is a vast range of Dell hardware and software options that will allow the user to configure a system at a price anywhere from $3250 to over $5000 The system is fast and well designed.

Express Micro Tangent Pentium 100 and Express Micro Pentium 133 These two large systems from Express Micro literally tower over the competition They are very large computers with vast expandability The Pentium 100 system has a quad speed CD-ROM drive and #9 Motion 771 graphics, plus a fast SCSI controller and an ample 300 watt power supply with dual fan It is a very impressive system, with sleek but gigantic casework.

The 133 MHz unit came fitted with the first six speed CD ROM drive we ve seen and the blindingly fast #9 Imagine 128 graphics card 32 MB of RAM, a Quantum 8 5 ms 2 2 GB hard drive and a very generous five year limited warranty A limitation of the BAPCo benchmark became available when testing the graphics

Continued on page 44

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Processor	100 MHz	133 MHz	120 MHz	100 MHz	133 MHz	120 MHz
[illegible]	PCI	PCI, 256K [illegible]	PCI, 256K [illegible]	PCI, [illegible] cache	PCI, [illegible]	PCI
System Bios	IBM	AMI	AMI 02	Award v 1.65	Award v 1.65	AMI
Plug & Play Support	Yes	Yes	Yes	Yes	Yes	Yes
Hard Disk Drive	1GB	1.6 GB WD Caviar 31600	528 MB IDE	Fujitsu 1.08 GB SCSI	Quantum 2.2 GB SCSI	850 MB PCI IDE
CD-ROM Drive	2X	[illegible] 4X	4X	[illegible] 4X	[illegible] 4X	[illegible]
Video Card	ATI Mach 64	Diamond Stealth 64V	#9 MotionFX 771	# Nine Motion 771	#9 Imagine 128/Cirrus Logic	Cirrus Logic GD 54xx
Max. Video Resolution	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024 w/256 colors	1280 x 1024	1024 x 768 w/256 colors
Max. Video Colors	16 M (640 x 480)	16 M (800 x 600)	16 M (800 x 600)	16 M (800 x 600)	16 M	16 M (640 x 480)
Video Memory	2MB	2 MB VRAM	2 MB VRAM	2MB VRAM	4MB VRAM	1MB
O/S Version	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11
Windows Benchmarks						
Word Processing	265.70	356.28	316.33	259.64	253.57	226.38
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Database	326.46	455.45	394.67	322.87	310.47	281.42
Desktop Graphics	342.12	462.28	408.40	338.22	408.13	371.64
Desktop Presentation	256.18	334.84	301.48	256.56	226.84	223.66
Desktop Publishing	241.92	331.23	320.78	243.44	236.80	210.30
SYSMARK	284.97	400.06	357.38	261.57	298.60	265.10
Extras	14.4kbps modem	14.4kbps modem	extended warranty	MS Home CD bundle	MS Home CD bundle	7 MS CD-ROM Titles
Contact	(905) 507 3278	(604) 273 6068	800 387 5752	(905) 479 1443	(905) 479 1443	(905) 479 6822
Suggested Retail Price	$6,589	$5,109	$4,000	$3,999	$6,896	$3,388
Warranty	3 Yr Ltd	3 Yr	3 Yr Extended	2 Yr Pts & Lab	6 Yr Lab 3 Yr Pt	3 Yr

*Prices are for a typical end user configuration. Extra features are noted in the [illegible]

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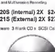

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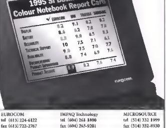

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POWER PENTIUM BUYERS' GUIDE

	IPC CD/FX-5133	Mynix/Mycomp	Packard Bell Executive 1000cd	Panasonic CF-41	Quanta ProMedia 5133	Sirius Premium Triton
Processor	133 MHz	120 MHz	100 MHz	75 MHz	133 MHz	120 MHz
[illegible]	PCI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
System Bios	AMI	Award	Phoenix	IBM v 0.02	Award	Award
[illegible]	Yes	Yes	Yes	Yes	Yes	Yes
Hard Disk Drive	830 MB PCI IDE	1.2 GB Conner IDE	1.06GB	680 MB Hitachi	1.1 GB Enchanced IDE	2.05GB Micropolis SCSI
CD-ROM Drive	4x Toshiba	4x	4x	2x	4x EIDE	4x Yamaha
Video Card	Cirrus Logic GD-54	Matrox MGA Millennium	Cirrus Logic CL543a	Chips and Technologies	ATI Graphics Xpression	Diamond Stealth/S3 V364
Max. Video Resolution	[illegible]	[illegible]	[illegible]	1280 x 1024 (ext. monitor)	1280 x 1024 w/256 colors	1600 x 1280 w/64k colors
Max. Video Colors	16 M (640 x 480)	16 M (800 x 600)	16 M (640 x 480)	16 M (ext.), 65,000 (int.)	16 M (800 x 600)	16 M (1024 x 768)
Video Memory	1MB	2MB VRAM	1MB	1MB	2 MB VRAM	2MB VRAM
O/S Version	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11	WFW 3.11
Windows Benchmarks:						
Word Processing:	232.53	266.81	264.5	199.[illegible]	3[illegible]72	260.78
Spreadsheet:	278.28	299.40	283.90	214.72	340.62	311.41
Database	286.48	313.83	330.58	230.72	378.47	346.71
Desktop Graphics	401.06	388.56	341.09	256.65	458.08	354.06
Desktop Presentation:	232.13	257.92	286.19	196.47	310.77	271.48
Desktop Publishing:	218.06	242.47	260.04	176.42	291.06	262.93
SYSMARK	275.47	306.45	285.83	216.06	332.94	320.06
Extras	7 MS CD-ROM Titles	15 Monitor, MS CDs	FaxWorks	Microphone	EDO RAM	EDO RAM
Contact:	(800) 470 6622	(514) 344 2690	(905) 564 1122	(905) 624 5010	800 450 3466	(905) 470 2412
Suggested Retail Price	$3,898	$4,695	$3,481	$13,300	$4,865	$6,380
Warranty	3 Yr	3 Yr	1 Yr Onsite	3 Yr	2 Yr	3 Yr

Prices are for a typical end user configuration. Extra features are noted in the table.

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IBM ThinkPad 360CSE	- 4SX33 STN Colour 340Mb 4Mb	$3 349
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IBM ThinkPad 755CS	4DX2/50 STN Colour, 170Mb, 4Mb	$4 349
IBM ThinkPad 755C	- 4DX4/75 Act Colour 540Mb 4Mb	$6 749
IBM ThinkPad 701C	4DX2/50 Act Colour 360Mb 4Mb	$6 799
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IBM ThinkPad 755CX	Pentium75 Act Colour 810Mb 8Mb	$9 149

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Pentium 90*	$2,105/70mo
Pentium 100	$2,295/74mo
Pentium 120*	$2,060/91mo
Pentium 133*	$3,225/103mo

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All prices are cash discounted [illegible]

CD ROM DRIVES, etc.

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TOSHIBA 3601B SCSI EXT	$659
TOSHIBA 4X EIDE 5302B	$275
SONY CDU76S 4X SCSI	$325
SONY CDU76S 4X EXT.	$499
SONY CDU76E 4X EIDE	$275
SANYO 4X SCSI INT	$349
SANYO 4X SCSI EXT.	$499
SONY 55E 2X EIDE	$159
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Stealth 64 Video 2Mb VRAM	$499
Viper Pro Video 4Mb VRAM	$799
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PP 28.8 Fax/Modem Int/Ext	$299/329
Lexmark Optra R Laser Printer	$2 249
Canon BJ200EX Printer	$339
Samsung 17GLs Monitor	$1 199
Samsung 17GLs Monitor	$999
Logitech SoundMan Wave	$149
SoundScape Elite (2 DSP)	$349
Logitech ScanMan 256	$149

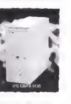
We Want Power

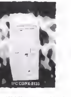
Continued from page **41**

card the full power of the Imagine 128 only becomes apparent when running it in an ultra-high-resolution high-bitplane mode Even considering the fact that the benchmarks may have understated graphics performance somewhat it is a very fast system The six speed CD ROM drive loaded the entire 150 MB of the benchmark suite in about four minutes

This system like past Express Micro towers we've reviewed represents the leading edge of high performance and expandability Both models are well suited to use as a high performance personal system, or a local network server

IPC Signature Series, IPC CD/FX 5120 and CD/FX 5133 These two compact mini-tower models from IPC are virtually identical in external appearance They only vary significantly in processor speed, as the FX-5120 comes with an Intel 120 MHz Pentium, and the FX-5133 has an Intel 133 MHz Pentium processor As with most IPC computers the two systems are very cleanly and solidly made, and come bundled with a good mix of multimedia features (including quad-speed Toshiba CD ROM drives 14 4 voice/fax/data modem, external stereo speakers, and a set of seven Microsoft CD titles) Both units are very fast nearly reaching the magic 300 percent BAPCo baseline PC performance It was intriguing to note that the 133 MHz model had only marginally faster overall performance than the 120 MHz processor Although the processor is about 10 percent faster in practice this is only one part of the speed equation the amount of RAM the hard ➤


IPC CD/FX-5120


IPC CD/FX-5133

Pentium Test Notes

We got used to quad speed and six speed CD ROM drives exotic graphics and blinding speed while doing this survey but we tried not to be blinded to the best price/performance value The big surprise to us was the modest increase in overall performance offered by the new Intel Pentium 133 MHz processor compared to the older 120 MHz model The 133 MHz chip seems to add only a few percent to applications speed Compared to this, a high end graphics card or the new EDO RAM seem to offer an immediate 5 10 percent boost in benchmark speed for the same or less amount of marginal cost As of early July, 1995, the Pentium 133 MHz chip commands a premium of $600-$700 over the cost of the 120 MHz chip This price will undoubtedly come down fairly rapidly, especially as production ramps up and the launch of the Intel P6 chip gets closer but for the moment, 120 MHz based PCs are a better value Unless you have a pressing business case for maximum speed, for the next couple of months you might be better off to spend that extra $600 on EDO RAM,(or more RAM of whatever type) or a larger hard drive instead of the latest model of Pentium

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drive speed PCI bus, and graphics accelerator are all big factors so a 10% difference in CPU speed by itself translates in practice into about a two-to three percent increase in total Windows applications speed

The CD/FXs are fully Microsoft Windows 95 ready and Plug & Play compatible Performance was excellent and at a price of $3 299 for the FXS120 in particular these models are very good value It's worth noting that the premium you pay for the brand new 133 MHz chip compared to the older 120 MHz model is about $600 Expect this price differential to narrow as the 133 MHz chip goes into general availability IPC offers monitor options ranging from $300 for a 14" monitor to $900 for a 17

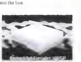
The monitor option that Packard Bell offers includes the ability to mount the external stereo speakers on the monitor case which is a nice feature This model is a very good home/home office/small office computer, easily expandable and excellent in performance

Panasonic CF-41 Multimedia Notebook This is the notebook for the mobile power user It has remarkably high-speed Windows performance (check the table to see that while it is considerably slower than the full sized Pentiums It is still more than double the speed of the 1993 vintage desktop), and full multimedia capability It has a built in CD ROM player (plus internal storage for a second CD) a microphone built in speakers and a big extremely bright screen that can display up to 65 000 colors at once Although not cheap (and not small – the need to accommodate the CD drive makes it a bit thicker and heavier than average), it is an exceptionally well-engineered product that is fun to use, and allows you to take the maximum of power out onto the road with you

Quanta ProMedia 5133 Desktop This unit clocked benchmark performance far ahead of most of the other systems Like the Mycomp tower, it uses the Intel Triton PCI chipset It has some additional features that add speed such as 512K synchronous SRAM cache and 16 MB of EDO RAM The 1 1 GB enhanced IDE hard drive and quad

➤

Mynix/Mycomp Pentium 120 MHz. This tower system the first Mycomp model we've reviewed in *The Computer Paper* labs was similar in appearance to the Express Micro tower PCs and it offered excellent performance and expansion capability The system is based on a PCI541T motherboard with Triton Chipset and was the first PC we've seen running the brand new Matrox MGA Millennium accelerator card Graphics performance was excellent The hard drive is a fast 1 2 GB Connor enhanced IDE drive The system comes with a quad speed CD ROM drive stereo speakers and a CD-ROM bundle of titles The casework is very nicely designed and laid out and the slide-out base is a nice touch that eliminates the usual hassle of having to screw the main body of the computer onto the base



Packard Bell Executive 1000CD The 1000CD is the top of the line Packard Bell multimedia PC built around a 100 MHz processor with a 1 08 GB hard drive quad-speed CD-ROM drive, built-in 14 4 kbps fax, and good, standard 1 MB graphics accelerator (upgradeable to 2 MB) The system has Advanced Power Management which powers down the hard drive when the system is inactive

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speed CD ROM drive permit extremely fast data transfer. All this comes in a very compact desktop case. There is something of a price premium to be paid for all this, but for Windows application speed, this is one of the fastest systems we've ever seen.

Sirus Premium Triton PCI Workstation. Other Sirus systems that we've reviewed in past surveys were very good, but this system was excellent. Though not the fastest, it was assembled from excellent component parts, and had superior multimedia performance. It has a Triton chipset based motherboard, with a super fast PCI SCSI controller and a 2 GB hard drive, quad speed CD-ROM drive, Ensoniq Soundscape Elite Wavetable Sound Board with Ensoniq Effects Processor, and Diamond Stealth 64 Video PCI card with 4 MB of RAM.

Sirus Premium Triton PCI Workstation

And The Winners Are

Editor's Choice for "Best Buy Power User's PC" is a tie between two speed demons in this survey: the **Dell XPS P120c** and the **Comtex Mach 5 P55CMS**.

For under $4 000, (confirmed by quotes from Toronto area retailers), the **Dell XPS P120c** unit combined extremely high speed with excellent engineering, first-rate components and high overall quality. The price included an extended warranty coverage to supplement the regular one year onsite Dell warranty with a limited additional two years parts and labor warranty. Dell has set a highly demanding price/performance standard that the other PC makers will have to strain to catch up to.

The other winner is the **Comtex Mach 5 P55CMS**, based on a 133 MHz processor. It has a very large 1.6 GB hard drive and offers the best speed we've yet encountered in *TCP* Test Labs surveys. The overall Windows performance was about 14 percent better than the Dell, and the price was about 20 percent higher. These units represent the peak of price performance for the individual PC user in Canada in the summer of 1995.

➤

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Magnavox 15" 1024x768 Non-Interlaced Monitor
INTEL 1MB PCI Video Card
Tower Case
101 Keyboard
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TEAC 55A 4X CD-ROM Drive with SB Sound Card and 8 Microsoft HOME Titles*	$483
NEC 4Xi SCSI CD-ROM Kit with SB Sound Card and 8 Microsoft HOME Titles*	$905
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(*8 Microsoft HOME Titles: Encarta, Golf, Works, Money, Ancient Land, Dangerous Creatures, Entertainment Pack and Bundle Sampler)

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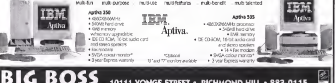

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Power Systems Part 2
Pentium? Whuzzut?

In addition to the mainstream Intel PCs, a new generation of RISC based platforms are offering extraordinary performance for the power user. Most of them run Windows NT, Microsoft's still-poorly understood high end operating system. NT is often chosen as the O/S for network servers, where its crash resistance, hardware independence, and multitasking ability lend it to "mission critical" applications. NT is also coming into wider use as the operating system for high end personal workstations. Typical applications are CAD, Animation, 3D design and rendering. Several vendors have recently come to market with personal systems based on one or another of the common RISC processors and running NT.

Amiware Post Station. This is one of the most unusual computer systems we've seen. Based on the DEC 21164 Alpha processor running at 266 MHz, this is a 3D rendering, animation and digital video editing and effects system. Processing is done at a speed of 470 floating point SPEC. The system runs Windows NT and, in addition to the Alpha chip, it can alternatively accommodate MIPS or Intel processors in lieu of Alpha. The motherboard has two SCSI II controllers allowing the high speed transfer of massive amounts of data that animation and video processing requires. The O/S supports RAID 1 hard drive arrays.

The basic Post Station comes with 2 MB of 12 Ns cache RAM, a 17 inch ViewSonic monitor, 64 MB of 70 ns parity RAM (expandable to 512 MB of RAM), a 2 GB Quantum Atlas SCSI hard drive, a Sony CD ROM drive, Ethernet card, Diamond Stealth 64 with 4 MB VRAM, MS keyboard and mouse, and MS Windows NT 3.5 for $22,000. The main virtue of this system is sheer speed for specialized graphics and video tasks. Long time computer animation buffs may remember the famous Video Toaster on the Amiga, used for creating the effects on Babylon Five and Seaquest DSV.

The Lightwave 3D animation software originally developed for the Video Toaster runs over 50 times faster on the Post Station than on an original Amiga 4000/040 with a Video Toaster installed.

➤

AMIWARE POST STATION

Processor	DEC Alpha 21164 300 MHz
Architecture	PCI 2MB cache RAM
Hard Disk	2 x 2 GB SCSI (4.5ms)
CD-ROM	Sony double speed
Video Card	Diamond Stealth 64
Max. Vid Res	(1600 x 1280)
Max. Vid Col	16 Million
Vid Mem	4 MB VRAM
O/S Version	MS Win NT 3.5
Extras	LightWave NT 3D S/W
Contact	(905) 940 6840
SRP	$22,000
Warranty	1 Year

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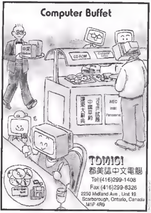

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The Lightwave 3D animation software originally developed for the Video Toaster runs over 50 times faster on the Post Station than on an original Amiga 4000/040 with a Video Toaster installed

Amblin Imaging (a Spielberg company which does some of the effects for Star Trek) is among the professional users of this system The Post Station is considered to be 4 times faster than a Silicon Graphics Indy and 2 times faster than an Indigo2 For the power user who wants a desktop system to help create the next Jurassic Park, this is a good choice

IBM Personal Computer Power Series After developing terrific RISC processor technology IBM then failed to market it effectively for nearly a decade As a result of its collaboration with Apple and Motorola in the development of the PowerPC processor family however, IBM has finally been moved to bring affordable RISC technology to its high end PC line The 830 and 850 models are built around PowerPC 604 chips running at 100 MHz (the 850 can also be fitted with 120 MHz or 133 MHz models) These systems can run OS/2 Warp Windows NT AIX v 4 for clients and Solaris (PowerPC edition when available)

Motorola PowerStac RISC PC DT604-100 and MT604-100 As one of the original partners in the PowerPC consortium it was perhaps to be expected that Motorola would be interested in doing more than just manufacturing the chips Somewhat analogous to the IBM Power Series, the Power Stac PCs are PowerPC based personal systems designed to offer RISC performance and NT reliability to individual users In their initial incarnation these PCs run UNIX (AIX) and are "Windows NT Ready" but are intended to be compatible with other operating

➤

IBM POWERPC 850

Processor	PowerPC 604 100 120 133 MHz
Architecture	PCI 512K cache
Hard Disk	IDE 1 GB
CD ROM	Quad Speed
Video Card	PCI SVGA
Max Vid Res	N/A
Max Vid Col	N/A
Vid Mem	2MB
O/S Version	OS/2 Warp/or NT/or AIX
Extras	N/W built-in speaker mic.
Contact	905-316 3902
SRP	$6 298-$8 699
Warranty	3 Year

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MOTOROLA POWERSTACK DT604-133

Processor	PowerPC 604 133 MHz
Architecture	PCI, up to 2MB cache
Hard Disk	SCSI-2 1GB
CD-ROM	Quad Speed
Video Card	PCI 64 bit 8514-compat
Max Vid Res	1280 x 1024 256 colors
Max Vid Col	16 Million (800 x 600)
Vid Mem	1MB
O/S Version	Win NT, AIX 4 1
Contact	905-507 7200
SRP	N/A
Warranty	5 Year

systems" (such as OS/2?) as those are ported over

As part of an overall solution that includes the larger PowerStac servers, these PCs make sense However it would seem that Motorola may need to get more experience in the PC market, and offer more compatibility lower price and better performance if this is to be more than a niche product

NEC RISCstation 2200 Of all the new high end PCs running the NT operating system NEC's offerings are probably the most credible as an option for a serious business computing solution NEC pioneered the high performance RISC NT market when it made an early decision to adopt the MIPS processor as the basis for the first NT workstations Microsoft standardized on the early NEC models as the original platform for Windows NT As Windows NT has grown NEC's expertise in RISC technology has also increased The model 2200 is the latest NEC NT PC and it offers high performance multimedia flexibility and high reliability at a reasonable cost The RISCstation 2200 is based on a 200 MHz NEC VR4400MC processor This is an NEC version of the R4400 chip created by a subsidiary of Silicon Graphics MIPS Ltd

To encourage the spread and adoption of SGI technology SGI has made it possible for any manufacturer who agrees to maintain compatibility with the MIPS processor standard to manufacture their own versions of the processor The NEC RISCstation has some familiar PC features PCI bus PC style audio and graphics – but it also has unique features such as a special 3D animation processor to give extremely high rendering performance

Apple PowerMac 8100/110 When we started this survey the lastest Mac out of Apple was the 8100/110 When the review unit arrived at our offices we ➤

NEC RISCSTATION 2200

Processor	NEC VR4400mc 200MHz
Architecture	PCI 1 MB Cache
Hard Disk	PCI 2 GB
CD-ROM	Quad Speed
Video Card	PCI 32-bit
Max. Vid Res	1280 x 1024 256 colors
Max Vid Col	256
Vid Mem	2 MB VRAM
O/S Version	Windows NT 3.5
Extras.	supports Open GL cards
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SRP	$10 674
Warranty	3 Year

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chased away the regular crowd of Mac enthusiasts and set it up. When we connected it to its AV style monitor (which either takes a regular video cable feed or a combined video/audio output from the 8100) and powered it up, we were initially shocked by its apparently sluggish performance. Quickly we determined that a previous reviewer had polluted the PowerMac native environment by turning on some utilities based on old style Motorola 68x code. The PowerMac is perfectly happy running most old Mac software, but its performance really drags unless it is running "native" PowerMac programs.

After turning off the offending old software, the system speeded up incredibly in particular software that makes good use of the PowerMac's strong floating point calculating ability (such as 3D software and Adobe Photoshop) is faster than any Pentium.

We were very impressed by the 8100 until a few days before this article was to go to press when Apple announced the new PowerMac 9500 which is claimed to be twice as fast as the 8100. Our opinion of the 8100 went from profound respect and desire-to-own to irritation at being in the same room with a computer whose time had passed seemingly almost before it had arrived.

For all the progress that Windows has made, the Mac — any Mac — is easier and more pleasant to use, especially for creative applications. The PowerMacs have enough muscle to outproduce a Pentium based system in most graphics and communications applications though at a higher initial cost. Apple claims that the money you spend upfront on their hardware is more than repaid by the lower system lifetime costs for training, service, and lower productivity on a PC.

Silicon Graphics Indy: This entry level "personal workstation" from the Silicon Graphics line of computers is perhaps the

➤

APPLE POWERMAC 8100

Processor	PowerPC 601 110 MHz
Architecture	NUBUS 2 SCSI buses
Hard Disk.	2 GB
CD-ROM	Quad Speed
Video Card.	Apple built in video
Max. Vid Res	1280 x 1024
Max Vid Col	16.7M (req. 4MB VRAM)
Vid Mem	2 MB (upgradeable to 4)
O/S Version	System 7.5
Extras.	Ethernet PlainTalk, Mic.
Contact	905-477 5800
SRP	$8,329
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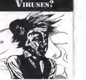

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ultimate power users PC. For one thing, its operating system is a flavor of UNIX which is both mysterious and powerful like the hardware. Everything about the Indy is a little exotic to the ordinary PC user. It comes with a tiny digital video camera (the better to do teleconferencing with). It doesn't necessarily come with an externally-accessible drive that you can insert some kind of disk cartridge or tape into (the assumption is that the Indy is on a network, where not everybody needs a floppy drive). How do you attach a modem to it? (Usually you don't you're supposed to be on a network remember?)

However, once you start to figure it out, the Indy turns into a thing of beauty. Its graphical user interface is very elegant and is tied in with the underlying UNIX command line interface in such a way that you can do everything by point and click, or by command line or any mixture of the two. It's a perfectly multitasking system, in a way that Mac and Windows users can only dream of. And it's fast. Based on the MIPS R4400 processor it's at least as fast as any of the current Power Macs. And for greater speed the Indy is designed to seamlessly connect to larger SGI computers where it can share processing tasks with its bigger siblings.

The main uses of the Indy are for 3D animation, high level desktop publishing, digital photography, video and CAD. There is excellent native software in all of these areas though compared to much PC software it is quite expensive. Once we figured out how to attach external drives to our demo unit (quite easy, via a well implemented SCSI interface) we loaded and tested Alias Animator 6.0, Adobe Photoshop and Illustrator on the system, and found that in spite of an almost old-fashioned clunky user interface it is incredibly powerful, fast and flexible as a media creation tool. The Indy we tested was configured as a Webforce Internet system and unlike the often crude World

►

SILICON GRAPHICS INDY

Processor	MIPS R4400, 200MHz
Architecture	N/A
Hard Disk	1GB SCSI 2
CD-ROM	Dual Speed SCSI 2
Video Card	On-board graphics
Max Vid Res	1280 x 1024
Max Vid Col	16 Million (1280 x 1024)
Vid Mem	N/A
O/S Version	IRIX (UNIX) 5.3
Extras	32 MB RAM
Contact	905-625-4747
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Wide Web authoring solutions we've seen on other platforms, this is a professional online publishing system. SGI claims to be making rapid strides in the Web publishing boom.

And The Winners Are: To Be Determined

The models we looked at were pretty diverse: UNIX, PowerMac, MIPS/NT, Alpha/NT, Dual Pentium/NT. It isn't possible to compare these products directly with each other, though a few comments may be in order. First, although the new PowerPC based desktop PCs from IBM and Motorola look promising for high end solutions, they have a long way to go in terms of building a user base and some compelling software applications. They are also expensive.

The latest PowerMacs (especially the 9500) offer superior graphics and animation power, and a part of a well-established computing platform and user community. If Apple follows its usual procedure, we can expect to see the price of the 8100/110 decline quickly due to the advent of the 9500.

The big surprises were the NEC RISC Station and the Silicon Graphics Indy. The NEC product is a surprisingly mature, complete system, reflecting NEC's early commitment to RISC and NT technologies, and it is a very viable, usable option for the serious power user. The SGI Indy is the affordable entry-level model in a range of computers that is almost infinitely scaleable and compatible, up to the highest range of supercomputing capability. It has some terrific 3D and Internet publishing solutions available, and is highly recommendable in these niche markets.

The DEC Alpha-based Post Station is a sort of technological mutation, a dedicated video/animation system that is incredibly powerful though specialized in its possible application. With the exception of the PowerMac line, which has passed its millionth unit sold, it remains to be seen which of these other systems will find a significant number of users from within the ranks of the PC community. ❑

Test Lab Expands Staff

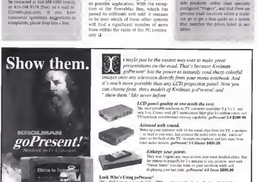
The Computer Paper wishes to welcome Chris Fisher as the latest full time staff member in the Test Lab. Chris has an extremely strong technical background with PC technology, having worked as a consultant, systems integrator, and network technician. He brings very solid technical skills, an eye for detail, and a fervent enthusiasm for personal computing technology to the lab, and we look forward to a considerable strengthening of the technical capabilities of the lab due to his presence. Chris can be contacted at 416-588-1580 (voice), or 416-588-8574 (Fax), or e-mail at Chris@tcpon.com. If you have comments, questions, suggestions or complaints, please drop him a line.

Survey Prices: You Complained, We Listened

Prior to this month's survey, we've relied on suggested retail prices supplied by manufacturers for the models they submitted to our surveys. It's often hard to be entirely accurate when computer industry prices and model configurations fluctuate so rapidly, and we try to verify prices as carefully as possible.

In a few cases however, readers have contacted us to complain either that the configuation described in a survey was not readily available, or that configurations matching the price quoted actually had less RAM, smaller or different hard drives, or differed in price/features in a variety of ways from what was described in our article. Whatever the source of these errors, they really are not acceptable either to us or to you readers.

Consequently, we will be moving to a "street price" listing for products tested in comparative surveys, based on an average of at least two retail quotes for the exact configuration surveyed. Even this "street price" will only be an approximation, given the monthly or weekly price changes in the industry, but we believe that this method of price checking will ensure that the models tested in our lab are real, widely available products, rather than specially configured "ringers", and that there are genuine retail locations where a reader can go to get a firm quote on a system that matches the prices listed in our tables.



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Apple Introduces First 604-based

BY GEOFF DUNCAN

Apple has introduced the Power Macintosh 9500, the first Macintosh based around the PowerPC 604 processor and also the first to include the PCI (Peripheral Component Interconnect) bus a standard in the Intel world that will replace NuBus expansion slots Code named Tsunami, this six-slot tower Macintosh runs at 120 or 132 MHz is rated as much as twice as fast as previous Macs and is aimed at high-end publishers, engineers and computing-intensive users The Power Mac 9500 also introduces new architectural elements that will become standards as Apple evolves the Power Mac line however, starting at a whopping $8 749 in Canada these new machines aren t for the faint of wallet

The Power Macintosh 9500 will either leave you drooling for its power or moaning about the expensive toys you can't bring over to it

New A PCI Bus

The Power Macintosh 9500 will either leave you drooling for its power or moaning about the expensive toys you can t bring over to it First gone is NuBus the Power Mac 9500 is the first Macintosh to incorporate the high performance PCI bus. In theory, PCI should make it simpler for manufacturers to produce expansion hardware for Macs, since different driver software should be all that's required for a Mac or a PC to use the same card If you must take NuBus cards over to PCI, Second Wave offers a few pricey solutions that let you use up to eight NuBus cards with a PCI Mac

Goodbye SIMMs, Hello DIMMs

Next gone are your SIMMs The Power Mac 9500 is the first Mac to use 168-pin DIMMs (Dual Inline Memory Modules) DIMMs provide a 64 bit bus which eliminates the hassle of installing Power Mac SIMMs in pairs However the 9500 supposedly takes advantage of identical paired DIMMs treating them as a 128 bit memory bank and gaining another 10 percent or so performance improvement For the memory hungry, the 9500 is a dream machine, with 12 DIMM slots and a capacity of 768 MB of RAM with 64 MB DIMMs

Newer Technology is reportedly developing a conversion unit to allow 72-pin SIMMs to be used in a 9500 The 9500 has no RAM soldered onto the motherboard (except for a 512K cache) so the DIMMs provide all of the memory

The hassle? The entire motherboard must be removed to add or remove RAM

New Emulator

Next gone? The old emulator that allows Power Macs to run 68K applications The Power Mac 9500 incorporates the long-rumored 68K emulator that's supposed to be 15 to 30 percent faster than the emulator shipping in current Power Macs Though floating point operations in 68K code are reportedly still relatively slow, Macworld's tests indicated that the emulator outperformed high-end 68040 Macs.

CPU on Daughterboard

The Power Mac 9500 has its CPU on a small daughterboard that can be easily replaced Thus, when 150 MHz 604 chips become available upgrading a Power Mac 9500 should be straightforward and relatively inexpensive Also, upgrading the daughterboard may improve the video

➤

Clark Christensen

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Networking & SCSI
The Power Mac 9500 comes with both an AAUI Ethernet port and a 10Base T connector so there's no need to buy a transceiver to hook up to a 10Base-T net. Also the 9500 ships with Open Transport providing a more robust implementation of AppleTalk and TCP/IP (and probably breaking programs that do impolite things with MacTCP, like SurfWatch) Apple says the Power Mac 9500 also supports SCSI-2 Fast and has sustained transfer rates over 6 MB per second

System 7 5.2
The Power Mac 9500 also ships with System 7 5 2 which is significant for some people First System 7 5 2 includes new PowerPC native system software components including the SCSI Manager the Resource Manager the Ethernet driver and Open Transport. In additon System 7.5 2 blows away the four GB volume size restriction present in System 7 5 — the new maximum volume size is a Copland like two terabytes Also Copland-like is the Driver Services Library which allows PowerPC native device drivers and a standardized technique for graphics acceleration There's no word on when or if System 7 5.2 — or portions of it — will be available separately and the new 68K emulator is unlikely to make it to existing Power Macs

What's Missing?
With all this what doesn't the Power Mac 9500 have? For starters there's no built-in video you need a PCI video card Apple's base configurations will ship with a 24-bit accelerated mach64 PCI video card from ATI Technologies People familiar with the Windows world might wince at that because though ATI is generally well regarded for its hardware its video drivers have been hounded by compatibility problems

There's also no AV option for the Power Mac 9500 Though its audio support is good – 16-bit 44 KHz stereo playback and recording – the only way to do digital video or voice recognition will be through a PCI card At this time there's no information on whether Apple will make an AV card for PCI Macs However, the PCI market for video digitizers and similar products should prove robust especially if there's real compatibility with hardware from the PC world — and companies like TrueVision and Avid have announced plans to support PCI Power Macs

In A Nutshell
No one in their right mind can call the Power Mac 9500 a consumer product basically if you aren't certain that you need this machine you don't However, the 9500 is the first "second generation" Power Macintosh and for people in high-end, computing intensive environments the 9500's performance might well be worth the price ❑

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RESEARCH REPORT

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BY GRAEME BENNETT

SCSI Interfacee Teeted

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- Adaptec 1522
- Adaptec 2822VL
- Future Domain SCSI2GO
- Future Domain Plug and Play ValuePack
- SCSI interface supplied with HP Scanjet IIp
- Trantor 130B SCSI interface
- "No name" cheapo SCSI interface
- NEC SCSI interface
- Apple Macintosh (built-in) SCSI interface

SCSI Devices Tested

- Iomega Floptical for Mac
- Pinnacle RCD1000 Recordable CD System
- SyQuest 44MB drive
- SyQuest 88MB drive
- NEC CDR 77 Multispin CD-ROM drive
- Epson Magneto-optical drive
- Mindflight CD-ROM drive (Sanyo mechanism)
- Apple CD300 CD-ROM drive (Sony mechanism)
- Apple CD300plus CD-ROM drive (MKE mechanism)
- Hewlett Packard Scanjet IIp
- Hewlett-Packard Scanjet IIcx
- PlusTek ScanPlus scanner
- Fujitsu ScanPartner Jr
- Caere Typist
- Toshiba 3504 CD-ROM drive
- Numerous hard drives from Quantum, Fujitsu, Apple, etc

This article is intended to give decision makers and equipment purchasers the benefit of our long-term experiences with the above-mentioned products and companies. While some of these items have been superceded by later, greater models, it is useful to see how each product has fared in terms of software updates and compatability. Hopefully, by seeing how a company has treated its customers and supported its products over the long term, we can assist our readers to make better purchase decisions.

My apologies to those readers who may need explanations of some of the acronyms mentioned, there just isn't room to explain them all. Novices might want to check out the book Jargon, *by Robin Williams, or refer to some of my more beginner-oriented articles in previous issues, such as "Dial 'M' for Multimedia part 2," which appeared in August '94. You'll find this article, as well as many others, on our World Wide Web Site at http://tcp.ca/BackIssues/*

SCSI Interfaces

It has become clear to us that Adaptec and Future Domain are the two best-supported SCSI interfaces for the PC. OS/2, Windows 95 and Windows NT directly support the Adaptec products, although certain functions, such as the Adaptec's support for HP scanners and removable-media storage devices, requires additional software that may not be available for all OSes.

We tested Adaptec interfaces under Windows 95, OS/2 Warp and Windows NT 3.5. In all three cases, the operating system correctly identified and configured the card with no problems.

Adaptec makes several different models of SCSI interfaces, for virtually all types of PC: we've tested models for ISA and VL-Bus PCs. The key to our satisfaction with the Adaptec products is the sometimes-bundled software, EZ SCSI. If you are purchasing an Adaptec SCSI interface for use with a DOS or Windows PC, you need this software — ensure that the package you are buying includes it. During our tests, we purchased Adaptec 1515 and 1522 interfaces from "clone"

➤

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retailers. The main difference between these two models is the connector on the back: the 1515 has a 25-pin "Mac type" D connector on the card, while the model 1522 interface has the 50-pin connector found on most SCSI peripherals, necessitating the use of a 50-pin to 50-pin cable. Most SCSI peripherals we've seen ship with a 25-pin to-50-pin cable. Our Pinnacle RCD 1000 drive came with an Adaptec 1542CF interface, which uses yet another variety of connector, a diminutive SCSI-II connector. Aside from the differences in connectors, we found that the lower-priced Adaptec cards require jumpers to be changed on the card, while the 16542CF model can be configured entirely via software.

You might need to change jumpers as we did, to disable the Adaptec 1515 or 5122 card's on-board floppy drive controller and on-board BIOS, which made our test card pause for 20 seconds at startup time. (More expensive models are software configurable.) Our test system already had a floppy drive, and we found that the system wouldn't boot until we changed jumper settings on the card.

We tested the Adaptec EZ-SCSI software under Windows for Workgroups 3.11 and Windows 95, using it to add support for a ScanJet IIcx, Epson MO drive and Iomega Floptical drive without difficulty. We were also impressed with Adaptec's on-line support of its products via its forum on CompuServe. There we downloaded updates to the EZ-SCSI software and found useful information and configuration tips.

Running under Windows 95, Future Domain's line of plug and play SCSI cards proved to be the easiest PC cards we've installed yet. Even Adaptec SCSI interfaces and their EZ-SCSI software, which are also high on our recommended list, proved to be a lot more complicated to configure than these Future Domain products. We tested the Future Domain SCSI2GO PCMCIA (Type 2) SCSI card on an AST Ascentia and were up and running with a Toshiba CD-ROM drive or the very lightweight Mindflight model in literally minutes. In Windows 95, we simply installed the card and turned the machine on. It recognized the card, prompted us to insert a few of our Windows disks, and that was it — a welcome change from the usual grief of installing PC hardware.

We also tested a Future Domain SCSI ValuePack card for ISA bus. It, too, was literally as easy as plugging it in, turning on the computer, and waiting for Windows 95 to notice the new hardware (at which time it asked for "Windows 95 Disk 5"). After restarting the system, the CD-ROM drive (we used an Apple CD300plus, which is actually manufactured by Matsushita-Kotobuki) was fully configured and working perfectly. It's worth mentioning that none of the hardware mentioned here required that we identify any settings, correct model numbers or configure things manually in any way. It was all 100% automatic under Windows 95.

Running OS/2 Warp or Windows NT the Future Domain cards were far less ➤

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SCSI Interfaces Tested

Continued from page 57

convenient to install. Warp absolutely refused to boot after installing the card, and even after solving this problem by reverting to an older, archived configuration (using the ALT F1 archive option), the system would freeze every time we tried to open the System Settings panel. A Future Domain spokesperson explained that the FD cards are shipped inactive and that running a program called "pnpcfg.exe" (or plugging them into a system with a plug-and-play BIOS running a PNP-savvy operating system like Windows 95) turns the card on. Adaptec apparently ships its cards enabled by default, which is not the way Future Domain cards are preconfigured.

Windows NT had automatically detected the presence of our previous Adaptec interface, but it too refused to acknowledge the presence of our Future Domain card until we ran the PNPCFG utility.

Our conclusion is that an Adaptec interface is a better choice for NT and Warp users, while either brand is a great choice for Windows 3.x or Win95 users.

While there are numerous other suppliers of interfaces, many of the other brands we've tested either don't work at all with current operating systems such as OS/2 Warp and Windows 95, or else have troublesome compatability issues. For example, while we have successfully set up a Trantor 130B interface with both Warp and Windows 95 (it is also directly supported by Windows NT) we encountered driver hassles that were not an issue with the Future Domain and Adaptec interfaces, such as the fact that Trantor 130B drivers were not included with the March '95 "Preview Edition" of Windows 95, although they are present in more recent builds and the final product.

Nevertheless, Trantor has provided reasonably good support over the years, via its BBS and tech support lines. We'd name the Trantor 130B as a fair-to good choice.

It's worth mentioning that the interfaces we have mentioned here are by no means the top of the line models; on the contrary, we deliberately chose ISA-bus interfaces that are aimed at the mass market. For high performance SCSI hard drives and storage applications, local bus SCSI cards are available at much higher prices ($350-$500, as opposed to the $100-$200 range for the ISA-bus models mentioned here).

But there's frugality and then there's folly. We also purchased (and subsequently returned) a cheapo ($69) no-name brand of SCSI interface, hoping that it would prove to be compatible with one of the name brand models, and thus represent a super bargain deal. Alas, it didn't do a damn thing. We're not sure what it was intended for. The superstore salesperson gave us a blank look when we asked who we could call for technical support or updated drivers. (**insert standard warning about superstore computer peripheral purchases and/or salespeople here**)

Our attempts to cajole SCSI interfaces from Hewlett-Packard and NEC products into use for other SCSI peripherals met ➤

with similar failures. The NEC interface originally shipped with our stone-age CDR-77 drive, was not supported by any of the products we tested, nor was the HP Scanjet IIp interface we tried. Our hopes were temporarily buoyed by a message thread on HP's CompuServe forum (GO HPPER) that said that HP ScanJet interfaces shipped after 11/93 could be set up to support CD-ROM drives and other SCSI peripherals simply by downloading the appropriate drivers; unfortunately, our interface was a little older than that, and our attempts were fruitless.

PlusTek ScanPlus Scanner

We tested a Plustek Color 6000 scanner with a SCSI interface on an Apple Macintosh and found that it worked reasonably well, albeit with less color fidelity than more expensive and capable flatbed scanners. When we called Plustek to find out about obtaining driver software to use it on a PC, we discovered that the claimed "Hewlett-Packard compatability" of the ScanPlus apparently does not include the ability to drive the scanner from a PC that had, moments before, been connected to a genuine HP scanner. (The company also revealed that the touted 600 dpi resolution is actually 300 dpi in color mode.)

We tried Adaptec HP drivers and Hewlett Packard's own interface card and driver without success, and then called PlusTek. By the sound of it, no one else had ever called to ask about obtaining a PC SCSI driver for the scanner; at any rate, the company claims its SCSI scanner isn't compatible with the PC and no upgrades were offered. (The company suggested that we buy a separate PC model.) The PC specific model is available under the brand-names PlusTek, Certified Data, and possibly others. We tested the PC-specific Plustek scanner, but were not able to get it working successfully.

SCSI Devices Tested

Interestingly, we had a similar experience with Iomega, but with quite different results. We called Iomega tech support and asked them what driver we needed to use a Mac floptical drive with a PC, and were told that it wasn't possible. The drives used different ROMs, and the required chip wasn't available, the technician said. So, we tried it anyway using the Adaptec interface and software. It worked. We also had success using a Future Domain interface.

Even more interesting, we found that the product called Mac-to-DOS, produced by PLI, allows the reading and writing of Mac formatted floppies, MO and Floptical drives under Windows 95 — but only if a SCSI interface and driver is installed. We discovered that the SCSI interface doesn't even need to be present. We simply plugged in the Future Domain interface, which was automatically configured by Windows 95, and our previously crashing Mac-to-DOS software began working like a charm. This also worked with the Adaptec interfaces. It's worth mentioning that Synchronous Software, maker of the

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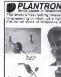

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new SoftRAM software that promises to double the available RAM of any PC running Windows 3.x, also offers a US$69 product called MacACCESS that reads and writes Mac disks Contact them at 310-842-9203

SyQuest 44MB and 88MB Drives

Our experiences with Syquest disks have been in a word disappointing The original 44- and 88 MB models are apparently highly susceptible to damage we have a huge stack of worthless platters after a few years of use We ve also encountered a large number of data loss problems In short, we re no longer fans of 44 or 88MB Syquest technology

NEC CDR 77 Multispin CD ROM Drive Epson Magneto optical drive

We have one of the old 128MB MO drives, and several of the new 230MB drives. Aside from a Fujitsu drive that became defective (inside the warranty period, thankfully) we ve never lost any data or suffered any problems with these drives or their disks After three years it's probably safe to give a hearty "thumbs up" to MO technology

Mindflight CD ROM Drive (Sanyo mechanism)

This cheap looking drive is not compatible with the Apple or FWB drivers or any of the other third-party Mac drivers we've tried and the MacPeak SpotCD software that comes with the MF is annoyingly buggy Interestingly, it works just fine on our PCs using the aforementioned Future Domain interfaces and in fact has proven to be a handy item to carry with a SCSI-equipped portable PC, due to its light weight

Apple CD300 CD ROM Drive

Works like a champ Certain Macs come with system software on CD this software only starts up the computer on a genuine Apple CD ROM drive (Astarte's "Toast" software for recording one s own CD-ROMs on a drive such as the Pinnacle CDR 1000 has a function that can make a Bootable Macintosh CD-ROM This feature only works on Apple CD300 drives)

Also, Apple s QuickTime software can digitize audio (from audio CDs) directly over the SCSI bus and write it to the Mac's hard drive. This feature works with only a few brands of CD-ROM, of which the Apple is one

We were also delighted to find that the CD300 works equally well when connected to a PC SCSI interface We ve tested it with Adaptec and Future Domain interfaces, no problems

Pinnacle CDR Unit

Speaking of the Pinnacle CDR unit, we're increasingly fond of our new found ability to back up materials onto CD ROM Not only is CD-ROM a very stable method for long-term storage (with a life expectancy conservatively estimated at 30 years) but almost everybody s got a CD-ROM drive these days, making it a very convenient way to share large amounts of data.

The Pinnacle drive records a full 650 MB of data onto CD in about 74 minutes We ve found that the Mac is considerably better than the PC as a CD Mastering workstation The Mac software we ve seen (of which the aforementioned "Toast" is our favorite) can write a much wider variety of CD formats than the current generation of PC software can Most notably the Mac can write standard Mac HFS and/or "hybrid" Mac/PC discs, while PC software such as Corel's CD Creator software supports only the ISO 9660 format We're currently working on making an entire year of *TCP* available on CD-ROM, stay tuned for more details on this topic

Hewlett-Packard ScanJet IIcx

Although it s now been succeeded by the ScanJet III, we have been generally pleased with our ScanJet IIcx scanners here at *TCP* Despite the oversaturated colors and artifacts introduced by HP's flawed but ambitious DeskScan software we find the unit to be among the best supported scanners on the market Although Windows 95 does not directly support any scanners the real-mode driver that comes with the unit, and the one that comes with the Adaptec EZ SCSI software both work fine under Win95

We d pass on the optional ADF and the transparency adapters though The latter in particular has proven to be quite a disappointment The ScanJet IIcx was reviewed in the April 95 issue of *TCP*

Continued on page **62**

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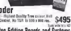

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SCSI Interfaces Tested

Continued from page 60

We were also pleased with the performance and compatibility of the Hewlett Packard ScanJet IIp scanner. We found that HP's AccuPage technology (also standard on the color models) substantially increases OCR accuracy, at a slight expense in performance. At the moment, WordScan Plus on the PC is our favorite OCR software. We've just received a new title called CharacterEyes Pro, we'll report on it in an upcoming issue.

Caere Typist

We once characterized this handheld unit as "Darth Vader's Remington." Well, now we just call it awful. Handheld scanners generally don't fare well with software compatibility and usefulness; this one's more problematic and limited than most. Although it's not a SCSI device, the Logitech ScanMan 32 is right near the bottom of the list, too.

Toshiba 3504 CD ROM drive

It was expensive for its time, but it's still one of the best-supported drives on the market (and, like the Apple/Sony drive, one of the few to support tricks like digitizing audio directly over the SCSI bus). In this era of quad speed and faster drives, our collection of dual speed units like this one are looking a little more pokey than they used to, but the drive is still in daily use and working well. We'd buy another Toshiba or Sony drive any day.

Numerous SCSI hard drives from Quantum, Fujitsu, Seagate, Western Digital, Maxtor, Toshiba, IBM, Apple, etc

It's interesting to view hard drives and other computer components from the perspective that we have here at *The Computer Paper*, where we have so many machines that it seems as though something is constantly breaking. Seen in this light, I've seen drives from virtually all of these manufacturers break down, so it's hard to pick the winners and losers. However, the salient point is thay all break down. If your data is not backed up right now you're asking for trouble. Don't put too much faith in data recovery tools. There's no substitute for a proper backup.

Summary

Despite occasional complexities, SCSI is a good way of adding hard drives, CD-ROMs, scanners, and other storage devices to your PC or Mac. Particularly on the Mac, which includes built-in SCSI support, or Windows 95, which includes plug-and-play support for most popular SCSI interfaces, SCSI is the easiest and most versatile way to add additional storage devices to your computer. ❑

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PANASONIC - CD NOTE		S R P	NBS
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Panasonic	486 DX4/75 Active 450	$7995	$4588

Texas Instruments - Lower Prices			
[illegible]	486 DX[illegible]	$[illegible]	$3111
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The Incredible Zip

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BY DANA CRANE

Product Iomega Zip drive
From Iomega Corp.
Price C$275 (est. street price)

After only two months on the market the Zip drive has taken the personal computing world by storm The demand for both the SCSI and parallel port versions of this compact, lightweight removable storage device is nothing short of phenomenal. Retailers are finding it hard to believe that a piece of hardware could rival the kind of demand they've only previously seen for software like Windows 3 1 Iomega, the manufacturer of the Zip drive is currently 10 000-20 000 units behind in their US shipments and the demand for disks, by all accounts is even worse

If you're like me you've probably always wished for, but never been able to afford a SyQuest or Bernoulli drive It's always been cheaper to upgrade an internal hard drive and put up with floppy disks for off line storage But by the time you read this, the Zip drive will have been released in Canada (officially set for July 1) for a street price of around $275 making it at least 50 percent cheaper than any other removable. The real cost of off-line storage however, is in the disks and at about $24/100MB (less in bulk), Zip disks can't be beat.

At these prices if Iomega licenses Zip technology to OEMs (Power Computing has already announced a Zip drive option for its Macintosh clones) we may finally see PC vendors including the Zip as an alternative to the outdated floppy drive.

So how can Iomega afford to offer these prices? The technology is not new Zip disks are magnetic media (the same as floppies and the platter inside your hard drive) and therefore subject to the same degradation over time Other drawbacks include the fact that there is no power on button (luckily it's whisper quiet and spins down after a period of inactivity) the 100MB disks actually hold only 95MB of data the SCSI version only allows two IDs (either 5 or 6) and the drive's power supply is almost as big and heavy as a bowling ball

On the plus side, installation was a snap After connecting one SCSI cable installing a driver, and a quick reboot, I was Zipping It also comes with a number of free (if not full-featured) backup and maintenance tools, and an external SCSI terminator to help with the black art of managing your SCSI chain But most surprising of all is that I've managed to knock my drive over twice while ➤

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it was running (I had it standing upright in front of my floppy port but I've since moved it out of the way) and the Zip never skipped a beat

Here's how the Zip stacks up against its closest competition according to FWB's Hard Drive Toolkit Benchtest (The test machine was a stock Mac660AV and a SCSI version of the Zip drive)

	Zip	SyQuest88
Capacity (MB)	95.7	84.6
Sustained Read (Kb/s)	995	825
Sustained Write (Kb/s)	997	792
Average Access Time (ms)	47	32
Average Seek Time (ms)	35.2	19.8
Reads/sec	48	40.5
Writes/sec	49	54
Index	1.7	2.8
Drive Cost	$225	$599
Disk Cost	$24	$59

The Bottom Line

The stats show the Zip drive to be a real work horse but perception is always more important than reality and while the Zip can be used as a slow hard drive (I had no problems booting my Mac from the drive, running games like Marathon or playing large Quick Time movies) its real strength is as a low-cost back-up medium that will finally allow you to get rid of that mountain of floppies piling up under your desk.

Removables have traditionally only been found on the desktops of graphics professionals and in the print shops they frequent, but the Zip drive is a removable for the rest of us. After waiting for more than a month on back order through MacConnection I can say run don't walk to your nearest dealer before the scarcity of these drives jacks up the price. ❑

Contact Iomega 800-697-8833 or 801 778-1000

Iomega Readies 1GB Jaz Drive

NE — Iomega Corp has announced another high capacity removable media drive, this one capable of storing up to one gigabyte (GB) of information on a single disk.

The new offering, which is called the "Jaz" drive is still under development and isn't expected to ship until the end of the year Iomega said it expects the street price to be under US$500 and the 3.5 inch Jaz disks will have a street price under US$99

Jaz will ship with a starter disk that will contain Jaz Tools a utility program for storing, moving and managing information

Iomega said the new disks have the capacity to store and play an entire movie, compressed in the MPEG (Motion Picture Experts Group) 1 format up to eight hours of CD quality audio or up to eight minutes of broadcast quality video You could also store as much as two hours of MPEG1 compressed DSS satellite quality video or more than 20 000 scanned documents for document imaging.

Iomega also said it will ship an internal version of the Zip drive later this year. ❑

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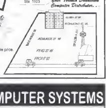

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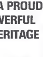

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Basic configuration

ASUS motnoard,256K cache,8M RAM,Quantum 540 HD
1.44M Panasonic FD,ATI Mach64 1M video card
Daytek 14"Non-interlaced 0.28 monitor, 3 button mouse
Panasonic CR-562 double-speed CD-ROM,
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Giving Your

MagnaRAM
From Landmark Research International Corp
Price $67.95 (includes Free Upgrade for Windows 95 and Free Quick Restart – Restart Windows right where you left off in seconds)
Minimum System Requirements 386 CPU, 4MB RAM, 2 MB hard drive space, Windows v3.1 enhanced mode

If you've had your PC system for a while and haven't made any massive upgrades, chances are that you will soon need more RAM (Random Access Memory). With the rise of larger and more sophisticated software, particularly Windows based applications, most people want to run more and larger programs faster. Multitasking with large programs at a reasonable speed requires plenty of RAM. Plenty of RAM adds up to plenty of $$$.

A new program from the Landmark Corp allows you add more memory to your PC without the $50 per megabyte price tag that physical RAM is selling for these days. MagnaRAM is one amongst a growing line of Windows memory enhancement utilities that increase available memory using data compression techniques. (*The Computer Paper* is currently testing Syncronys Software's SoftRAM. We'll report on it, and Connectix Corp's RAM Doubler, in an upcoming issue.—Ed.)

Windows uses a combination of physical RAM and virtual memory. MagnaRAM works with both RAM and virtual memory, compressing data and programs on-the-fly while reducing the amount of time it takes to access the Windows virtual memory swap file.

Depending upon your configuration, MagnaRAM will increase your available Windows memory by two (2:1), three (3:1), even four (4:1) times. MagnaRAM will add an additional four to five megabytes to a typical 4MB system as well as increasing computing speed significantly by avoiding swap file hits. On-screen statistics show how much memory has been compressed, the compression ratio, the amount of swap file hits avoided and the approximate amount of time saved by doing so.

Unfortunately, you can't have your cake and eat it too. With incredible advantages come some inherent flaws. MagnaRAM will not increase the size of conventional memory so valued by older DOS applications. MagnaRAM will not replace your DOS memory manager nor will it literally "double your RAM" as the amount of available Windows memory is always changing. Nor will it increase your system resources. Some people report huge gains in memory size and performance while others report smaller gains.

When MagnaRAM is first installed, you will notice infrequent increases in memory and performance, because the program has only begun to work. Remember, memory is compressed on an "as-needed" basis. The compression becomes better and the computing speed grows faster as programs are used more and more.

How Well Does It Work?

We tested MagnaRAM on two systems. A 386DX-40 with 4MB RAM (16 MB virtual

MagnaRAM:

Windows Memory a Boost

BY RYAN JAMIESON AND JOSH COLLEBAN

memory file) and a 486DX4-100 with 8MB RAM (12MB virtual memory file) and the results on both PCs were quite impressive. In the first test, we tried running as many DOS prompts as possible simultaneously with MagnaRAM compression enabled. On the 486 system, we got up to 35 individual prompts open. With no MagnaRAM present, we got up to 14 running before running out of memory. On the slower 4 MB 386 system, MagnaRAM opened 17 prompts whereas the system itself only opened eight.

The second test also favorably demonstrated MagnaRAM. We multitasked a variety of programs on the 486DX4-100 system and came up with these results.

With MagnaRAM: WordPerfect 6.1 for Windows, Microsoft Excel 5.0, Microsoft Powerpoint 4.0, Microsoft Visual Basic 3.0, Micrografx Picture Publisher 4.0, Corel Draw 3.0, Grolier Encyclopedia 95, French Assistant for Windows, WinFax Pro, AfterDark, HSC Digital Morph (11 applications.) We were left with 6 percent resources and 5 MB of Windows memory after opening and editing multiple files in each of the programs.

Without MagnaRAM: WordPerfect 6.1 for Windows, Microsoft Excel 5.0, Microsoft Powerpoint 4.0, Microsoft Visual Basic 3.0, Micrografx Picture Publisher 4.0 (five applications). We were left with 4 percent resources and 3MB Windows memory was available after opening and editing multiple files in each of the programs.

Our tests show that MagnaRAM significantly boosts Windows performance, by showing that you can run more programs, run larger programs and overall, run your Windows-based PC faster with MagnaRAM. ❑

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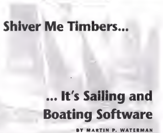

Shiver Me Timbers...

... It's Sailing and Boating Software

BY MARTIN P. WATERMAN

This year marks the 100th anniversary of Joshua Slocum's single handed circumnavigation of the globe. This Canadian born (Westport, Nova Scotia) adventurer and sailor accomplished the feat that earned him world-wide notoriety in an mere 37 foot wooden boat. To this day he remains a beacon to legions of boaters who feel lured to the joys and challenges of navigating the world's waterways.

Slocum could not depend on tidal software satellite maps instructional videos or games to hone his skills and to navigate his vessel But these days computers have taken the recreational and professional boating industries by storm, and a sailor need never (well, hardly ever) go above deck to navigate the high seas

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And guess what? You don't even need to be in a boat to use and enjoy some of this software a bonus in a country such as ours with a short summer season and where winter sailing and boating are practically non-existent Following is a selection of software you may want to consider whether you just want to get your feet wet or are a veteran or novice sailor

Dolphin Marine Systems

Some boaters can boast they learned to sail on the Great Lakes the Mighty Pacific or the Stormy Atlantic If you purchase the Dolphin Marine Systems Sailing Instructor Software you can boast that you have also battled big time waves (albeit as you learned to sail on your computer) There are eight lessons and all are worth mentioning

In Lesson 1 you learn about Basic Sailing on an 18 foot catboat in Chesapeake Bay Lesson 2 takes you through Sailing Theory aboard a 24 foot sloop in San Francisco Bay Lesson 3 concerns Rules of the Road and you find yourself in Boston and Newport with a 29 foot cutter Lesson 4 may be an appropriate one for winter since you learn Navigation and Piloting in the Florida Keys with a 32 foot ketch Lesson 5 deals with Racing Techniques in Chicago and Lake Michigan with a 35 foot Sloop Lesson 6 covers Cruising Techniques with a 42 foot Ketch/Motorsailer in New York and Long Island Sound In Lesson 7, you learn about Passage Making in Southern California and the Pacific with a 45 foot Cutter and finally Lesson 8 deals with Heavy Weather in the Pacific Northwest and Vancouver with a 52-foot yawl

Two more modules are in the works Lesson 9 (advanced navigation specializing in Inland waters) and Lesson 10 (prepares you for the Coast Guard Captain Exam)

I had the opportunity to use the Rule of the Road module At first I was a little disappointed because the program runs in DOS as do most of Dolphin's programs However much to my surprise the software turned out to be better than many Windows programs I have reviewed I really enjoyed trimming the sails, studying the navigation station with all its gauges, trying to stay on course and using the charts

"This is the only series that incorporates simulation and tutorials claims Jim Spalding president of the company

Dolphin Marine Systems has been making boating software for over 10 years and also sells a sailing and powerboat simulator. Both list for US$75 and allow you to choose between a selection of boats. For $49 95 you can get a collection of either East Coast or West Coast voyage disks (or both for $80) The West Coast collection contains four destinations, including a Vancouver Vacation where you can sail (or motor boat) around Vancouver Victoria Puget Sound and the Georgia Straits

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Dolphin also has complete computer and software systems for your boat that can assist with automated yacht management, navigation weather forecasting automated logs fax, e-mail and communications.

For die hard marine software fans Dolphin Marine Software has also introduced the first ever marine console for personal computers in June The Dolphin Virtual Helm Console sells for US$149 95 and contains a complete simulator interface that duplicates the components found on most real boats The console comes equipped for both powerboats and sailboats with a wheel and tiller throttles trim controls, winches and menu select controls The console supports all Dolphin software products including Sailing Simulator, Power Boating Simulator and the Sailing Instructor Series.

Contact Dolphin Marine Systems Inc. P O Box 188 Downington PA 19335 1-800-367-3822
(No Canadian distributor — sells direct to a few retailers Most Canadians order direct)

Fleetwise
Fleetwise for Windows offers five different software based courses about boating and sailing I looked at Recreational Vessel Operator which consists of 26 lessons The course is approved by NASBLA (The National Association of State Boating Law Administrators) and recognized by the US Coast Guard as being acceptable for the National Recreational Boating Safety Programs Other software titles from Fleetwise are Helmsman (yacht racing rules), Tactician (tactics and strategies for yacht racing) Race Officer (for race committee officers) and Fundamentals (basics of yacht racing)

Recreational Vessel Operator is multimedia teaching software in which you are presented with a course of study followed by testing The program can even reward you with a diploma for a successful completion of the course This program is easy to use and I like the animation (mini movies) although at times the movies lack contrast and some are dark You can take lessons in any order and I have taken several I found the learning was easy and enjoyable A feature I like is that each lesson provides you with the objective and the estimated time required to complete the lesson Also before you can complete the lesson you have to take the quiz and answer the majority of questions correctly To pass the course (and earn your diploma) you need to take and pass the final exam with a score of 80 percent or above

Also included with the software is a reference library consisting of International Inland Navigation rules, IYRU Yacht Racing Rules, NOAA Weather and a Glossary

If you want to learn about recreational boating and do not want a game or a simulator this is a very good program. Load it on your computer and when you need a break you can study one of the lessons The software retails for about $89.95 in Canada It was designed for those who are unable to attend United States Coast Guard Auxiliary or US Power squadron courses in the United States

To run Fleetwise for Windows you need a machine that can run Windows and a CD-ROM drive. A Super VGA and 8 MB of RAM are recommended You do not require a sound card and speakers There is also a Macintosh version available The software also comes with an unconditional money back guarantee

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Sail 95
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This is a high end game that requires a SuperVGA graphics card (1024 x 768 256 color) 486DX or better processor 8 MB of RAM and 20 MB of hard drive space It is also recommended that you have a Windows compatible sound card (for cool sound effects and stereo music) local bus video and a joystick. If you have the hardware the software produces an incredibly accurate aero and hydrodynamic sailing model fully 3D virtual reality simulator environment, flexible configuration of all race options detailed wind and weather modeling, and sophisticated opponent artificial intelligence Perhaps Dennis Connor would have been better off using this program than some of the other business software that he endorsed All joking aside the software has been used with the women s America s Cup team it is also being used in the Special Olympics to provide training for sailing athletes

I have become a devoted user of Sail 95 When I need a break from doing writing and business on my computer I prefer games that are challenging yet relaxing but still take a good degree of strategy I also like the fact that you can adjust the game to different degrees of difficulty I used to play games such as multimedia pool but find that Sail 95 is one of the most relaxing games I have played The graphics are terrific, and the sound of the sea is so realistic that you can practically smell the sea salt Of course when you get into a close race your heart starts pounding and you may even break into a sweat This is a very realistic game and has a sneaky way of drawing you in

For the Experienced Mariner

According to Ross Ballantyne down at Waterman Services in Vancouver's stylish False Creek while games edutainment and simulation packages may satisfy a landlubber's thirst, two navigational programs are proving particularly popular with experienced mariners.

Infonav Mariner (Infonav Corp is based in St. John s, Nfld) is a Windows program that graphically shows a vessel's position on a digitized official Canadian Hydrographic Services chart The program costs $386 and charts are $25 each

Tides and Currents is another popular tool from Nautical Software of Beaverton OR Version 2 includes more than 800 Canadian tide and current stations using Canadian Hydrographic Service data (and includes data on non-Canadian locations as well) The data are valid until the year 2100, and program costs $175 ❑

Contact Waterman Services 604-686-4790

This program will soon be evolving into the Official Software of the next America s Cup (negotiations are currently underway with New Zealand) but in the meantime there is nothing wrong with this software for those who feel they must wait for the next release I am sure that the "95" in the title may discourage some purchasers and this is a shame because this really is a fun program if you have the resources to run it The current version was released in February of this year and sells in Canada for about $60 A future product is expected to include a head to head modem version so that you can sail against a real opponent Cool eh?

Contact

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SailNet

SailNet is an information source that can be found on the World Wide Web It evolved out of a very popular B B.S and is a clearing house for sailing information They also provide an opportunity for people to chat in forum areas You can also access marine weather (linked to Environment Canada and other weather sites) and manufacturers. Thus far the site is free and they don't know if they are going to charge in the future since they do receive support from advertisers. The address is http //www sailnet com This is an excellent place to go if you are interested in state of the art sailing technology equipment and information Much of the site is under construction but nonetheless there is still plenty of information of interest to boaters ❑

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The Works

*Continued from page **24***

without fuss and has multiple charting options (although very few 3-D charts are offered) Excel (.xls) and Lotus (.wk1 and .wk3) file formats can be imported easily Database and database reporting tools performed without a hitch

Curiously there is no communications module included with ClarisWorks even though an icon has been provided on the main menu In fact clicking on this icon brings up the dreaded Windows Terminal program! Fortunately, this oversight has been somewhat offset with the inclusion of a bonus add-on program Claris calls FaxWorks 3.0 meaning one won't be modeming with any productivity but will be faxing like crazy with this full featured utility

ClarisWorks 3.0 also supplies a help feature they call "Assistants," which guides users step by step through the process of setting up a document or presentation (yes, there is a small presentation software module provided) These Assistants actually do most of the work when called upon occasionally asking the user for customized bits of information It was in the process of using one of these Assistants to set up a screen presentation that a dark discovery was made namely that this part of the program is sluggish and very resource hungry After giving birth to a pair of out-of-memory messages (which required a Windows exit to clear) the Assistant spent over 35 minutes (!) generating a simple 8-page non graphical screen presentation. Granted, the testing equipment (intentionally held to an entry level unit) was but a 486 33 with 8 MB RAM, but I was not impressed Even the nifty Freecell card game they threw in didn't assuage my displeasure as I couldn't pull up Task Manager to switch to it while the Assistant was plodding away On a positive note, ClarisWorks 3.0 ran much more efficiently once installed on a Pentium machine

What Works?

- ○ Cost
- ○ Lean hard drive requirements (9.5 MB)
- ○ FaxWorks 3.0 and Freecell are a nice bonus.

What doesn't?

- ○ Slow and resource hungry
- ○ No comm program

ClarisWorks 4.0 In The Wings

Claris has announced that version 4.0 of this suite will be released in the fall The company says it will support all the features available with Windows 95 such as long file names Version 3.0 is not compatible with Windows 95

WordPerfect Works 2.0

WordPerfect Works 2.0 comes with a strong pedigree The WordPerfect Corporation (now owned by Novell) has been at the forefront of word processing software ever since the early days of personal computing So it is to no one's surprise that they are backing a horse of their own into the entry-level productivity suite market

The first thing one notices when firing up this program is the preponderance of button and tool bars Where ClarisWorks ►

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boasted a clean complexion, WPW absolutely explodes with graphical action buttons of every description and it is quite possible to have over one hundred of these little guys on the screen at one time! Passing the mouse over them brings up a description of their purpose which is welcome when considering the minimalistic program manual. The core program provides a solid word processor (to be expected) spreadsheet, and database manager. Drawing and painting components are presented as separate modules at the main menu but, as with the other programs they are bereft of advanced effects and not full-featured enough to rate as anything more than enhancements to the word processor. There is no communication module provided with the package but there is an icon at the main menu to access the archaic Windows Terminal or a third party comm program.

WPW's interface may appear a little cluttered at first, but once each button's purpose is understood they become a definite time saver – single mouse clicks can accomplish just about any task. The word processor has a very good spell checker and Thesaurus (derived from its famous parent) and can be mastered in just a few sessions. The spreadsheet and database manager will efficiently deal with the needs of any home user and can import a wide variety of third party files (including later Lotus wk3 files). Spreadsheet charting options are light years ahead of the other two programs with over 60 chart types available (including a bevy of 3-D options). Integration between the different modules is easy by using Clipboard to copy-and paste user created "frames." Up to nine documents can be opened and displayed simultaneously.

One of the nicest features of WordPerfect Works is its 100 levels of "Undo" and "Redo." Ten levels would have been nice, having a hundred is positively luxurious. This program also ran quickly and problem free on the 486 test machine. (The only glitch encountered was in having to set Windows' resolution to 640x480 and 256 colours in order to run the introductory tutorial.) The bonus add-on of "Quicken for Windows" home accounting software helps to round out an already well presented package.

What Works?

- 100 levels of "Undo."
- Simple "one-click" button bars
- Large selection of spreadsheet charts
- Does not hog system resources.

What doesn't?

- No comm program.
- Sparse manual.

PerfectWorks 2.1 Ships

Novell recently began shipping an upgrade to PerfectWorks. Outwardly the packaging sports a new look in keeping with the fact that the product is now owned and marketed by Novell. Inwardly Novell has incorporated an interface that looks more like the full-blown PerfectOffice suite. Also taken from PerfectOffice are writing tools like QuickCorrect and Grammatik. And the word processor is also compatible with WordPerfect 6.0/6.1. Novell says that in all, it has incorporated 30 new features or enhancements in Version 2.1, including a communications module which was lacking in the 2.0 version. ❑

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Weaving Your Own Web Site Part III

Forms and Using CGI

BY KEITH SCHENGILI-ROBERTS

By now you have been traveling around on the Web for a while, and are beginning to think you can add more zest to your Home Pages. Or maybe you are part of a firm interested in exploring the business opportunities on the Web. If this is the case, you need to know how to create forms on the Web, and how to get information from them.

Formulating Forms

Creating forms is easy If you already have some proficiency in HTML, you will have no problem making your own forms The browser interprets the HTML codes you enter, and creates a Home Page filled with professional looking text boxes, menus and buttons

Forms are created by using the <FORM> </FORM> pair of tags within a Web page Individual form element tags are used to create various form types when seen through a Web browser

There are five main form element tags you can use to create your form You can create radio buttons checkboxes, drop-down menus, text fields and submit buttons. All you have to do is define the type of form element you want using the <INPUT> or <SELECT> tags the name associated with that tag and a value associated with each part of the form

Radio buttons are used when you want to present a number of available options to someone but allow them to choose only one of them Just like the pre-selected stations you have set on your push button car stereo radio buttons only let you choose one item at a time A typical radio button entry looks like this

```
<INPUT TYPE="RADIO"
NAME="RADIO_BUTTON"
VALUE="ITEM2"> Chargecard
```

INPUT TYPE=RADIO tells your browser to present a radio button on your screen displaying "Buy This" beside the button. If a person clicks on the "Chargecard" option in their browser, it will send VALUE="ITEM2" to a data storage area called RADIO_BUTTON on your Web server. You will be able to retrieve this data via a program you must write to hold and process all of the values sent to it via the form (more on this later)

Checkboxes should be used when you want to present multiple chosable options to someone viewing the form A typical checkbox line looks like this

```
<INPUT TYPE="CHECKBOX"
NAME="CHECK BOX"
VALUE="CHEAP_ITEM">Keychain
```

If a person clicks on the "Keychain" option in their browser, it will send VALUE="CHEAP ITEM" to a data storage area called CHECK BOX on your Web server. The CHECK_BOX data storage area will be

➤

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configured so it can handle multiple inputs from several checked checkboxes

You can also create drop-down lists from which a viewer can choose a single option. They are similar to radio buttons in terms of functionality, but offer a different way of presenting information on a form. Drop-down lists are created using the <SELECT> </SELECT> pair of tags rather than <INPUT>. You first call up a menu tag, include some options to appear in the drop-down list, and then close of the list, as in the following example

```
<SELECT NAME-"MENU">
<OPTION> Cool Stuff
<OPTION> Boring Stuff
</SELECT>
```

In this case, a drop down menu will appear on the viewer's screen, and the option "Cool Stuff" appears. If they click on the down arrow beside the menu, the second option "Boring Stuff" can be seen. The option that is selected by the viewer will be sent to the MENU data storage area on the server

Creating forms is easy. If you already have some proficiency in HTML, you will have no problem making your own forms

If you want to present a default option on your form, simply place the word CHECKED at the end of the INPUT tag, or at the end of the OPTION tag if you have created a drop-down menu. The result will be a checkbox or radio button that will already be selected (but which can be changed) when the viewer sees it. Also, if you want your radio buttons or checkboxes to appear in a nice vertical line on your page, don't forget to place a <BR> line break tag at the end of each line (note that this does not apply to drop-down menus)

If you are looking for non-standard input, like comments or questions from somebody viewing the form, you'll need to use <TEXTAREA> </TEXTAREA> pair of tags. Declare the initial TEXTAREA tag, name the value to be associated with it, and then describe how it should look on screen. For example:

```
<TEXTAREA NAME="TEXT_AREA"
ROWS=2 COLS=40></TEXTAREA>
```

It may seem strange to have the pair of <TEXTAREA> tags appear without anything between them, but it creates a "virtual" space. In this case, a text field that is 2 columns in width and 40 spaces across will be seen when viewed through a Web browser. Any information the user types in will be sent to the memory storage area called TEXT_AREA on the server.

You also have to include a push-button so that the person viewing the form can indicate that they are finished and that the information they have entered is ready for processing. You can do this by using the SUBMIT modifier of the <INPUT> tag. A typical submit button looks like this

```
<INPUT TYPE=SUBMIT Value="Submit
this Info">
```

A button will appear on the form with the words "Submit this Info" on it. When the button is depressed it send the information contained on the form to the Web server for processing. Make sure you remember to close off the form with the </FORM> end-tag

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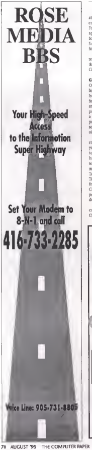
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One of the best places to learn more about HTML forms is on the Web. Try a site entitled "Mosaic for X version 2.0 Fill Out Form Support," which despite its name is applicable across most browsers. It can be found at http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/fill-out-forms/overview.html

Now you have to devise a program to retrieve the information people are entering into the form you've just created. That's where the Common Gateway Interface (CGI) comes in.

Common Gateway Interface Scripts

Okay this is where the fun stuff begins. A background in programming is certainly helpful to get through some of the following. There's not enough space in this article to cover all (or even most) of the programming tricks necessary for becoming a fluent Common Gateway Interface (CGI) programmer, but this article will lay down some basic principles, and give you an idea of how to get started.

The Common Gateway Interface is a standard method to communicate between your gateway and the server. When you want to retrieve information from a form, you have to have somewhere to send it. It is sent to the Web server which — by definition — must be running a program called the Hyper Text Transport Protocol Daemon (HTTPD). This program accepts the input sent to it from your form, and passes it along to the CGI script. This means that there has to be a program residing on the Web server that can deal with the data sent to it by the form.

Before you get too deeply involved creating your own CGI scripts make sure that your Internet Service Provider will let you run CGI scripts on their system. As you will see in a moment, there are some security concerns when using CGI scripts, and for this reason not all Internet Service Providers take the chance that their system (and your files) could be hacked by someone who knows more about programming than you do.

CGI scripts can be written using any computer programming language that can be executed by your Web server. The majority of CGI programs out there are written either in C or Perl, which can easily be run on the Unix systems used by most of the World Wide Web servers out there.

There are two methods for retrieving information from your form, GET and POST. These are both CGI commands that are recognized by the HTTPD server. The GET method uses environment variables to send information to the server. The POST method sends standard input to the server. The method preferred by most people is POST, as some Web servers automatically truncate the data sent to them via the GET method.

In the form you have created, you need to insert a POST command at the beginning of the <FORM> tag to send the information to the Web server. In the body of the initial form tag add the method to send information to the server plus the name and location of the CGI script that will interpret the data from the form, for example

```
<FORM METHOD=POST ACTION="host-
name/cgi-bin/test.pl">
```

In this case, the POST method is being used to transmit data from the form to the server. The server then takes the information and sends it to the location where the CGI script resides on the Web server. The host name is the name of your Web server, and /cgi-bin is the name of directory to look for the CGI script file test.pl

The CGI script must be written so that there is corresponding value for data that is input into the selected fields: checkboxes, menus or radio buttons. In other words, for each of the CHECK BOX, RADIO BUTTON or other entries you have in your form, there must be a corresponding place holder in your CGI script that is ready to accept the data that will be passed along to it.

Perl is used in this example. When using Perl, you have to include a statement at the beginning of your CGI script that tells the system where to find Perl on your system. A typical line would look something like this.

```
#!/usr/local/bin/perl
```

If you are planning on using Perl to write your scripts, make sure that your Internet Service Provider has a copy of it on their system.

One way you can process the information entered onto your form is to collate the data and have it passed to you via e-mail. A small routine that would be able to do this would look something like this

```
# variable listing Naomi's Email address
$naomi =
naomi.cat@somewhere.com.ca

# send Email to Naomi
open (message, "| mail $naomi"),
```

➤

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```
print message "To: $naomi\n",

# append contents of two of the form s
fields to the Email
print message  Method of Payment
$FORM[RADIO_BUTTON]\n\n"
print message  Method of Payment:
$FORM[TEXT AREA]\nun",
close (message)
```

It is always a good idea to include plenty of comments when writing your CGI program, so that when you return to it later — and you can count on returning to it later — you can easily debug your code In Perl, comment lines begin with a pound (#) symbol The comments in the example illustrate how the code functions at specific points in the program

This is not all that s needed to write usable CGI code. It is a good idea to include a routine that checks for the use of illegal characters Without this routine anyone who wanted to sabotage your site could do so by inserting commands in your text fields that could give them control of the Web server It is also a good idea to throw in a routine to acknowledge receipt of information to the person entering information into the form and to report any problems or errors that may have occurred during processing Before making a form and its CGI script public make sure that it works properly Create a test site for your home page and ask some of your friends and associates to hammer away at it to see if they can "break" it It is far better to learn about any programming mistakes before you go "live" with your form

Many businesses are beginning to make extensive use of forms in their home pages either as on line surveys or order forms Unfortunately a lack of security has kept the numbers of transactions low as consumers realize that sensitive information like credit card numbers can be intercepted at unsecured Web servers Over time, expect to see more commercial Web sites present secured forms for their on line customers In the meantime it is a good idea to include a fax number or request a telephone number from a customer to confirm payment for a transaction by other means

The author wishes to state that he is not an expert Perl programmer and apologizes for any glaring mistakes that appear in the program routines listed in the article The point of the routines is to illustrate key concepts rather than to provide syntactically perfect bug free code ❏

There is plenty of information on the World Wide Web to get you started writing your own CGI scripts Check out a good tutorial on CGI scripts at http //www.catt ncsu.edu/users/bex/www/tutor/index html or a collection of ready-made Shareware CGI scripts from http.//128 172 69 106 8080/cgi-bin/cgis.html If you are interested in learning more about Perl, look up the Perl FAQ at ftp.//ftp cis.ufl.edu/pub/perl/doc/FAQ.

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How To Publish on the Net

BY JENNY WINTEBOTTOM

HTML Publishing on the Internet
Authors. Brent Heslop and Larry Budnick
Publisher Ventana Press
(McGraw Hill Ryerson in Canada)
Price. $71.05
ISBN 1 56604-277 1
Paperback 479 pages 1995 includes Windows CD-ROM disk

Just as desktop publishing has transformed print production over the past ten years, today Internet publishing tools are ushering in the next generation of publishing As the Internet has changed from primarily a text based source of information, accessible and useful to only a select audience, to a forum that combines information, graphics, video sound and animation the World Wide Web has become the arena for almost anyone to publish access and distribute information around the world

The World Wide Web has become the arena for almost anyone to publish, access and distribute information around the world

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BY GRAEME BENNETT

Q Can you tell me any hints for converting TIF and EPS files to GIFs? I'm using GifConvertor and CliptoGif and both of them are pretty limited. Any hints? I'm using a Mac.

A DeBabelizer (or DeBab lite) can automate the process. I use Photoshop, DeBabelizer, GraphicConverter and Transparency (in that order) to do image conversions for the Web:

1) Photoshop to create images, resize, crop and change colors
2) Debabelizer to reduce and optimize color palettes and/or automate batch processing
3) GraphicConverter to interlace GIFs
4) Transparency to make transparent GIFs.

I sometimes use Fractal Painter 3.1 for its ability to make seamless background tiles, too. It is also useful for producing texture and lighting effects. ❑

Publish on the Net

Continued from page **80**

HTML Publishing on the Internet takes a symbiotic approach in compiling information needed to publish Web documents.

We have already seen the rapid rate at which information on the Internet is published, so what distinguishes one document from another? What makes a Web site effective and unique? If you've already been introduced to the masses of information on the Web, you have most likely noticed differences in the way documents are presented — from highly structured and visually stimulating to poorly constructed with useless information. *HTML Publishing on the Internet* has emphasized the necessity for good design when publishing on the Web. Chapters on "Creating Text Appeal" and "The Art of Linking" give the latest tips and tricks on how to structure your Web site creatively and effectively to attract readers. For those who have already mastered the basics of HTML publishing, this book also provides more advanced Web publishing techniques on how to make tables, forms, sound and video to create a fully interactive Web site for your reader.

For those who want to get published on the Web, but do not wish to do it themselves, *HTML Publishing on the Internet* is an excellent guide for understanding the alternatives for getting your document published. Included is a list of questions and options you should address when shopping for a service provider, as well as different services for HTML programming.

Although this book is written for Windows, it is a valuable guide for anyone looking to get the most out of publishing on the World Wide Web. *HTML Publishing on the Internet* combines many aspects of print and graphic publishing and design and gives it relevance and perspective on the World Wide Web. Written by Brent Heslop and Larry Budnick, and published by Ventana Press, you can find more on this book at http://www.vmedia.com/piw.html. ❑

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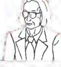

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Internet Porn Study Criticized

BY MARTYN WILLIAMS

NB — An 18-month long study into pornography on the Internet that *Time* magazine made a cover story of has been widely criticized as "inaccurate" and "reckless" by Internet users and groups that fight against censorship in cyberspace.

The *Time* story was written by Philip Elmer-DeWitt, *Time*'s senior editor for technology, and was based on a survey conducted by Martin Rimm, a student at Carnegie Mellon University.

When Elmer-DeWitt wrote in his introduction to the *Time* story, "The findings are sure to pour fuel on an already explosive debate," perhaps he didn't realize just how much debate the figures would cause.

Rimm's study was offered for publication to the *Georgetown Law Review*, *Time* magazine and *ABC News Nightline*. Between them, the three kept the survey secret until after publication meaning the whole story went unchallenged until published internationally in *Time* magazine's July 3 edition.

One of the central findings of the survey, and the one under most attack, is that 83.5 percent of images on Usenet, the Internet's global messaging and conferencing system, were pornographic.

This figure is incorrect in several, important areas, say critics. Firstly the survey only covered 17 image-orient groups on Usenet, so of course the figure was high. The Usenet system is made up of over 10,000 message groups that cover as many subjects. The figure was also derived after surveying the groups for just seven days.

Another area criticized is the survey of 917,410 images surveyed as part of the report. Many of these pictures, however, were only available on adult bulletin board services that required subscriptions and age checks before admission, not on the public parts of the Internet. Still this figure is incorrect, people argue, because the pictures were not actually viewed, just one-line descriptions of them.

Nevertheless the figures have already been seized by decency campaigners who are now repeating the 83.5 percent figure without mentioning, or probably even knowing, that these groups make up less than one half of one percent of all Internet traffic.

Certainly the report would not have been published if it had been subjected to review and criticism from other Internet users who would have raised the serious doubts now being made over the whole survey.

One of the main critics of the report is Professor Donna Hoffman of Owen Graduate School of Management at Vanderbilt University, who was refused access to review the study ahead of it being published in *Time*. Hoffman and partner Novak published a 9,000 word report on the Rimm study a week later.

Mike Goodwin of the Electronic Frontier Foundation and Danny Weitzner of the Center for Democracy and Technology were also denied a copy of the report despite being asked to review the legal footnotes of the study; both refused.

Over the weekend a further damaging declaration was made when Adam Epstein, a CMU student, placed a notice on his World Wide Web homepage (http://www.lnl.cmu.edu/~ae26/home.shtml) disassociating himself with the entire study by saying, "I did unfortunately write a few primitive *sed* and *awk* scripts which Mr. Rimm presumably used to sift through the data he collected for his study. Beyond that, I have no knowledge of his study. I've never seen the paper. Further, if I had been fully aware of its nature, I certainly wouldn't have had anything to do with it."

Users of the Internet can read the *Time* story via the magazine's Web site, http://www.pathfinder.com/. Discussions are centered in the alt.internet.media-coverage newsgroup on Usenet. Hoffman and Novak's critique of the Rimm study can be found at http://ww2000.ogsm.vanderbilt.edu/ with Rimm's response available at http://trfn.pgh.pa.us/guest/mrstudy.html and http://trfn.pgh.pa.us/guest/mrcc.html ❑

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What's Playing?

The Latest in Games and Gear

BY GORDON GOBLE

It's summer and the livin' is easy Well it is if you're hanging out on the fairway or drifting through your favorite fishing hole It isn't if you're a biker named Ben a guy with a bad attitude a good heart and a penchant for digging up trouble

This issue we'll hit the pavement hard and fast with Ben and LucasArts' powerhouse adventure Full Throttle, before changing gears and enjoying some more leisurely mid-year pursuits, with Amtex Software's Gone Fishin', and Lyriq International's Picture Perfect Golf Computer racing fans will definitely want to check out this month's peripheral review a look at the superb competition driving system

Full Throttle

From LucasArts
Street Price $65
System Requirements 486-33MHz CPU Double Speed CD-ROM drive 8MB RAM, Mouse.

Hard-edged rock and roll, screamin motorcycles a macho hero with a voice Darth Vadar can only envy, and a bunch of rotten to-the-core villains – that's the basis of Full Throttle an animated interactive movie that explodes on the screen, roars through the speakers, and assaults the senses as few adventure games have

FT is a story about greed corruption and the fine line that divides right from wrong It's heart-stopping, heart-breaking and often humorous Our hero Ben is a mean and ornery biker whose gruff exterior belies his strong moral fibre and sense of virtue

The bad guys are headed by one Adrian Ripburger (voice by Star Wars veteran Mark Hamill), a creepy yet savvy businessman who isn't above a little murder to get what he wants. Ripburger has schemed his way to a prominent position in America's last homebred motorcycle company Corley Motors, and is now bent on overthrowing the elderly president in order to achieve his own nefarious goals Ben and his gang, who happen to

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ride Corleys have stumbled onto the plan and are out to stop the evil-doers

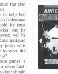
It's up to the gameplayer to help Ben through his mental and physical dilemmas and onward to victory Should he trust "Emmet " the long haul trucker can he believe Todd " the junkyard owner will he outsmart Little Todd " the sadistic junkyard dog? Will he survive highway jousts with demented bikers and be able to solve the puzzles and problems throughout?

Unlike "hardcore" adventure games a wrong move in Full Throttle is never fatal and the high production values alone should satiate even adventure veterans User interfaces are intuitive and subtly presented usually hidden off screen until needed. With tons of superbly rendered animated "cut" scenes (non-interactive chunks of story telling) intriguing characters excellent sound effects and an original head-banging score by real life biker band The Gone Jackals " this is one ride you won't want to miss

Gone Fishin'

From Amtex Software
Street Price $60
System Requirements 386-33MHz CPU CD-ROM drive 4MB RAM Mouse

Taking the level of urgency down a notch or two is Amtex Software's Gone Fishin a fresh water fishing simulator built for those who just can't get enough of the old rod and reel Notable not only for its nearly unique subject matter but also for its packaging (a small yet functional tackle box!) GF takes a good digital stab at this pastime



Unfortunately so much of fishing's lure is in the Zen like experience of actually being there on the water, that it is questionable as to whether the whole idea could ever transfer well to the computer screen GF is certainly something the kids won't take to but if you enjoy the technical aspects of high-tech fishing over the drama and experience of hooking, playing and landing the big one, this might be your ticket

GF opens with waves a lapping, fish a jumping and the theme from *The Andy Griffith Show* a-playing Right away we know we're not in the city anymore, Toto yet we haven't left the trappings of civilization far behind We've got sonar depth finders lure depth indicators, climate controls and pull down menus a la Windows (that look oddly out of place in the backwoods) There's a bevy of options to check out such as choice of angler, site, date time, weather and a whole lot more

The player is then presented with a map of Lake Ontario's Bay of Quinte and just like selecting way points for a fighter jet he or she will decide on a likely spot for a hefty

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catch. Once [illegible] position the interface changes now with an extra bank of icons and gauges across the bottom while the guy doing the fishing is in a little section of a boat protruding above that bottom bank of gauges. Sadly he remains almost immobile save for his casting and landing motion.

In between the games will initiate casts, reel in, do it all over again and monitor the gauges for information such as line tension and cast distance but get very little sense of being there.

If the scientific fisherman is your bag Gone Fishin certainly has the tools the equipment, and the statistics. To be fair it may just be as close to the real thing as anyone can be without getting wet. But is that close enough?

Picture Perfect Golf

From Lyriq International Corp
Street Price $60
System Requirements: 386-33MHz CPU CD-ROM drive 4MB RAM Mouse

If catching a fish through your PC doesn't get the old blood pumping, perhaps shooting a birdie or an eagle might be more to your liking. No, not with a gun silly but with a golf club.

Picture Perfect Golf is one of a ballooning lot of quality golfing simulations that have recently become available for the personal computer and for a couple of reasons it is quite distinctive.

In PPG, Lyriq International (notable for their computerized word games) has created a "virtual" golfing experience that allows digital duffers to conduct their game from a first person perspective. Unlike other golf sims there's no animated replica of yourself in PPG — just a clear path from you to the forest sand trap or green.

Because of this approach, you won't actually see the swing, but a full complement of shot making gauges across the bottom of the screen works well enough to help you get the ball to the green. And that green is pretty as a picture as a matter of fact it is a picture as is all the scenery in this innovative package. PPG uses nothing but actual photography in all its screen shots, meaning the only animated objects to be found here are your golf ball (which is little more than a small white circle), and you smacking your fist on the table after missing that two foot tap-in.

So what's it like playing a first person golf sim in the midst of nearly 400 MB of real pictures? Darn lifelike, that's what. With both real life pictures and a first person perspective at my disposal, I found myself deeply immersed in the one and only course

Continued on page 88

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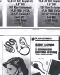

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What's Playing?

Continued from page 86

In the PPG package, Hilton Head, South Carolina (add-on courses will be made available every three months) PPG provides a number of real-life variables such as changing lies and breaks club selection, wind strength, sand traps water hazards and head to-head or solo play but is not quite as technically endowed as products such as Links 386 Pro

Some words of caution to owners of high-end ATI and Diamond Stealth PCI video cards based on the S3 chip the review copy of Picture Perfect Golf had assorted troubles with both. It was rendered completely inoperable with an ATI Mach 64 2 MB VRAM, while a Diamond Stealth 32-bit DRAM card caused PPG video to randomly disappear into golfing never-never land This is a problem not confined to this game and fortunately patches should be available on most on-line services.

Competition Driving System

From. Extreme Competition Controls
Price US$439
(Available through the manufacturer only)
Tel (612) 824-6733

It ain't cheap, but if you're a serious computer racer who wants to drive with a peripheral that actually improves both your handling and lap times, Extreme Competition Controls has the device you need In testing, the CDS consistently terminated the competition in all three of the genres top simulations (NASCAR Racing, World Circuit and IndyCar Racing), and did it infinitely better than any wheel yoke or joystick that's ever come across this desk.

It's a two part "system" made up of separate wheel and pedal units Together they work in harmony as a natural extension to the driver and take very little acclimatization, but the star of the show surely must be the steering unit Featuring a comfortably thick, three-spoked 11 inch custom fabricated steel frame wheel wrapped in black suede the entire assembly weighs 14 lbs and remains stationary without a clamping device

The wheel itself protrudes from the end of its angled adjustable brushed steel cylinder base and features noiseless action graduated resistance near the ends of its 180-degree throw and a notchless center It's beefy to be sure, and comes with four front-facing thumbswitches that if used with a dual joystick port can be set for any function that program supports As an added bonus the thing looks just too cool for words.

The CDS pedal unit is a little less exciting in description essentially a big black metal wedge with two metal pedals protruding from the tall end but hey, who said pedals had to be exciting to do their job What's important is that they're built for driving only with a small throw "heavier" brake and none of that annoying fore/aft movement of multi purpose pedals

If you've got the bucks the Competition Driving System will have you setting lap records, amazing your friends and frustrating your enemies It simply has no peer ❑

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BY PEDRO ARRAIS

The Random House Kid's Encyclopedia

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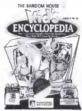
System requirements CD ROM multimedia capable Windows

Every generation has a way of talking and communicating that sets it apart from previous generations "Cool cat" gave way to "Groovy" and "Far Out Man " then back to just "Cool" (that's the last I heard anyway) Today's MTV influenced youth has been bombarded by hi tech digital images like no other generation Entertaining them is paramount — be it with music, video or still images The word jaded comes to mind So how do you get their attention and educate them at the same time?

When it comes to information and the dissemination of the same, the computer and CD ROM have set the standard for the future Unfortunately the titles while excellent sources of data and other information are generally dull and certainly not fun



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Continued on page 93

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Random House Encyclopedia

Continued from page 89

scratch for kids (hey I enjoyed it too! The tip off that this is unlike other encyclopedias are the Vid Kids that inhabit a virtual reality type of environment with primary colors and dazzling computer generated graphics

The whole layout is based on a quasi theme park with Cool Worlds to enter and explore Reference World Movie World, the Games World etc Want a guided tour? No problemo dude! Vid Kid's tours will take you along as you explore science astronomy mathematics, history literature and more

Once you have gotten the hang of it, you can conduct your own search on the above subjects some with short movies and rad pictures You can search any subject by category, geographical location timeline (history), or alphabetically

Let me assure you that the publishers did not leave anything out just because this encyclopedia was designed for kids In fact the program is actually on two CD-ROM s one for the arcade side, with all the games and trivia, and the other is the actual reference encyclopedia. The program can run just on the reference CD or the games CD a bonus for parents who may feel that the games CD is just too much fun!'

All in all, the program contains 2,000 articles 1 000 narrated entries a bibliography for every entry and over 250 movies and animations

Although this program covers much the same ground as other (adult) encyclopedias, it does so perhaps with less depth. In researching Genghis Khan for instance I could find two paragraphs with about 150 words On another program I was able to extract about 270 with the same parameters On the alphabetical search I was able to use the first letter to find the subject while the competition allowed more letters of the subject being typed in until the whole word is typed

The same shortcoming was evident in the movie section which requires you to scroll through the clips one at a time to get to the one you want – hopefully what you are looking for is not a clip on a zebra for you will have to scroll through 119 movie clips to reach it In addition there are no subtitles so you have to hear the audio before you know what you are looking at In their history section there are two headings U S and the rest of the world, so you can imagine where that leaves us Canadians again

But these gripes are minor in comparison to what the programmers have succeeded in doing This product is way cooler than anything else on the market and will ignite the imagination of a young adult (sorry, I meant cool dude or dudette) in their formative years It is something that they can relate to and, if it can teach them a thing or two, it is far better than all those reference books and software gathering dust on the shelf ❑

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Preparing Your Kids For the Future

BY JEAN ALLEN IKESON

Kids, Computers & You
Authors Frank B. Edwards & Thomas H Carpenter
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The subtitle "What parents can do now to prepare their children for the future," should be enough to start concerned parents pulses throbbing. The book focuses on how schools and educators are (or in many cases are not) using computers in the classroom

Kids, Computers & You is a gentle yet excellent guide to analyzing what is going on in classrooms, and to analyzing the process of encouraging school administrators and boards to institute effective programs. The worry is that, with more jobs requiring some computer skills a have and have-not division may develop between parents who purchase a computer for home use, and those who are not interested in or unable to join the flood

The authors outline this challenge in the context of Canadian schools. While they acknowledge "horror stories" and mistakes made, the focus is not on condemnation but on practical analysis and ways of working realistically with the system to help it keep pace.

The rapid turnover of computer technology puts schools at a disadvantage: their intrinsically conservative nature and decreasing budgets make providing up-to-date integration of computers in schools a challenge. The conclusion is that less emphasis should be placed on computers as objects especially in the younger grades, and more importance given to integrating them as part of a project

For instance, children's CD dictionaries might be made available while children are writing. Their ease of use and ability to pronounce words that kids do not recognize supplement writing and reading skills. The point is made that book publishing has matured over hundreds of years while "computer publishing" is still quite new. Canadian software publishers are now developing a local market for educational software and finding that they can then adapt it to the U.S. market.

However, I wish this book included advice to parents on what to look for in software for home use. It seems to me that total dependence on schools to provide "computer education" is naive. As a parent I feel satisfied that our home computer provides a wonderful enrichment, or supplement to what is being taught in schools. Software is improving dramatically. Look around at the next computer show and watch where the dollars are being spent. Parents are hungry for what they can control and contribute at home

The authors seem to dismiss this role on the basis that since home computers are not universally available, parents should concentrate on schools. However, the authors describe one trend in classroom/outside

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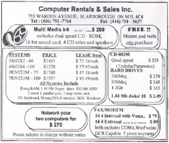
Kids, Computers & You

Continued from page **92**

organization joint ventures produced by the National Geographic Society. I find this an exciting program. It will, I hope, provide a model of what resources educators will have in the future.

National Geographic runs a kids' network for grades four to six, together with the US National Science Foundation. Kids work with their teachers, network moderators and other students around the world. It places science lessons in a global perspective during a six-week program. Perhaps, eventually, Canadian museums such as the Museum of Civilization will also provide kids' networks so that Canadian students in even remote villages will benefit from terrific Canadian resources.

This book praises an Ontario Royal Commission on Learning Report that recommended that school boards stop counting the number of computers in schools and start emphasizing the quality of technology. In the end, however, parents are still responsible for ensuring that government guidelines are translated into successful education in the classroom. *Kids, Computers & You* provides parents and teachers with a commonsense analysis to fulfill this responsibility in the schools. ❑



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Ecology is Focus of Broderbund Sequel

BY PEDRO ARRAIS

The Backyard
From: Broderbund
Price: $54.95 (street price)
Ages: 3-6
System requirements: Multimedia-capable Windows or Macintosh

What do you do when you get a hit in the software business? You do like the movie business and spin off a sequel with the same look and feel of the original but with enough changes to give it a fresh perspective.

So it is with The Backyard by Broderbund. This follows The Playroom (1989) and The Treehouse (1991), both excellent titles still in circulation. The Playroom and The Backyard aim at the same age group, three- to six-year-olds, while The Treehouse aims at the five to eight crowd.

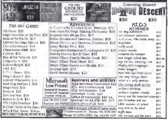
While The Playroom aims at pre-reading and pre-math skills, The Backyard is more in keeping with the current concerns for the ecology and thus concentrates on wildlife habitats and animal behavior. Broderbund calls its three titles the "World of Exploratory Learning," and the strongest thread among them is the intuitive interface that children interact with. Just about everything you click on does something and the six activities are launched quickly.

A real life backyard would be the first environment that most parents would feel comfortable letting their children explore. In this computer backyard, the sandbox is filled with hidden treasure and the kids have got to figure out how to get to it. Parents can adjust the difficulty level to suit the age and development stage of their children.

The scarecrow sounds out facial expressions as well as having a collection of silly faces just for the fun of it all. You can change the scarecrow from surprised to quiet with different clothes, hats and hair.

The picnic table holds a pumpkin for the children to adorn with vegetables. The items can also be rotated, flipped and duplicated to

Continued on page **96**



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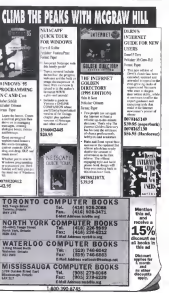
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Want Internet Training? Check Out These Sources

BY DENISE ROMBERG

Within the computing section of any modern bookstore you'll find an ever increasing number of titles devoted to online communications and more specifically the Internet. However if you don't feel like reading thick manuals in order to gain access to the information superhighway, new avenues offering hands-on training are becoming increasingly available.

To start, check out the services available through local Internet service providers. Some providers offer Internet training to help new users become familiar with the myriad services available. Local providers often advertise in *The Computer Paper*, so look through this issue. *The Canadian Internet Handbook* also lists local providers in most centers across Canada.

A call to your local university or community college may yield another training resource to explore. Many of these institutions provide Internet training for their students as an extension of the library facility. They may provide such education to the outside non-enrolled community through a continuing education department or an interactive learning centre.

Otherwise enrolling for even one course at the institution will provide you with the library card required for logging onto the institution's Internet service, and give you access to any training the institution provides to its students. Internet instruction may also be available online through a modem connection to the institution's library.

While the training at such a facility may be inexpensive, a possible down side is that the communications software may not provide access to graphical interfaces such as Mosaic or its upgraded commercial version known as Netscape, which allow you access to the World Wide Web. If you are interested in Web browsing, keep this in mind.

Also check local computer clubs because the membership may be asking for this type of training and it may be free to members.

Some retail stores that specialize in software are beginning to realize that offering Internet training will bring new people to the store. Fees for such training are usually minimal, but the material presented may be little more than a cursory overview without the hands-on facility provided by other training entities. Also available through such stores are video tapes that provide both explanation and instruction for using the Internet, and software designed to teach Internet skills.

Internet training is becoming more common in the line-up of offerings from companies whose sole purpose is to provide basic computer training for word processing, spreadsheet and database functions. Such training is mostly hands-on, providing students with their own computer terminal during the training time. The cost can range from $100 to $300 per course.

Depending upon the training centre chosen, some will divide the Internet instruction into groups of functions and bundle the training into several courses that begin with introductory training for those who are not very familiar with computing, and become increasingly sophisticated for those who wish to create their own World Wide Web pages in Hypertext Markup Language(HTML).

Some companies that offer training will require students to open their own CompuServe accounts. Internet training is provided at a location where students can

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Internet Training

Continued from page **94**

log onto CompuServe but are using both the time and facilities their CompuServe account permits. In these cases, certain Internet services such as World Wide Web access are not standard features and users are charged a surcharge to access these features if they have only the minimal fee account with Compuserve.

Digital Equipment of Canada, through a new partnership with Open Market Inc. and Netscape Communications, is providing seminars aimed at non technical business users who wish to explore the business opportunities of the Internet's World Wide Web. Seminars are scheduled in eight cities across Canada.

Digital can be contacted a 1 800-DIGITAL.

Check as well with local centres that provide Novell and Microsoft certification training. Digital, among others, includes in its new roster of courses a two-day $800 classroom and hands-on course entitled "Using Internet Applications" You usually need to be PC literate before enrolling in these courses.

Throughout the summer months, Data Tech Institute of Clifton, New Jersey will visit seven Canadian cities offering a two day seminar entitled Accessing the Internet. The training is a combination of lecture and in-class demonstrations designed to provide a practical guide to using Internet services and information resources available on the Internet. The fee for the two day seminar is about $900. The company also offers Internet training through a self teaching video package priced at $295.

Data Tech can be reached at 201 478-5400.

If you already have an Internet connection but wish to augment your skill, World Wide Web training material can be accessed online at URL http//info er usgs gov-4444/train. Finding your way to the virtual reference desk of the University of California at Irvine and typing the command dir will also yield an Internet assistance menu. Another online source, "Zen and the Art of the Internet" by Brendan Kehoe, is a good introduction to the Internet and its use and can be accessed by ftp at ftp cs widener.edu in the directory pub/zen. ❍

USER GROUPS

ATTENTION USER GROUPS. Send in your listing (maximum 40 characters) for the September issue by Monday July 31 1995. Submissions run for one month only in the local edition. *The Computer Paper* reserves the right not to print submissions which are deemed unsuitable.

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CLIPPER DEVELOPERS ASSOCIATION OF TORONTO For info call Mike Parente 905-336-5851 ext. 447

INTERNATIONAL PROGRAMMERS GUILD Meets every 2nd week at 7:00 pm on Tues PM at the MacCherney 32 Wellington E Toronto. For info or a free copy the newsletter call IPG at 905-824-7947

NLGUA-Canada meetings takes place at Fitzs 516 Church St Toronto 7-9pm on the first Friday of each month upstairs or if it's nice out on the patio. For more info call 925-9872 ext 2959

PCCT (PERSONAL COMPUTER CLUB OF TORONTO) meets 3rd Tues at 5100 Yonge St, North York at 7:00 pm. Voice info line (416) 633-6071

THE CANADIAN AUTODESK MULTIMEDIA USER GRP call Pia Zimpani at (416) 929-8155

THE CANADIAN INFORMATION PROCESSING SOCIETY For info call Rick Panton 516-1437

TORCHI (Toronto Region Computer Human Interaction) meets every 2nd Wed of the month at 7:00 pm. Call M. Bochas (416) 449-3607

TORONTO APL SIG 4th Mon of every month at 6:30 pm at BCE Place 181 Bay Street 10th Floor. Or write: Toronto APL SIG Box 384 Adelaide Street P.O. Toronto ON M5C 2J5 Cal Ben Best (416) 962-3153.

TORONTO BORLAND USER GROUP meets 1st (C/C++) 2nd (Paradox) and 3rd (Quattro Pro) Thurs of every month at 6 pm, 5:30 pm and 7 pm respectively. Meetings held at Borland 5001 Yonge St, 14th Floor. Membership info call David Kirsch 416 567 1160 Fax BBS (905) 271-8786

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FALL BUSINESS & COMPUTER SHOW September 27–28, 1995. Ottawa, ON

INFORMATION CANADA. September 27–30 1995. Toronto, ON. For more information call 203 226-6967

THE ATLANTIC CANADA BUSINESS COMPUTER SHOW September 13 & 14 1995 at the Halifax Metro Centre, World Trade Centre, Halifax NS. Entrance fee is $11. Contact Carol Smith, Show Manager at 416-252 7791 or fax 416 252 9848.

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Parents and Kids Show Oct 27–28. Vancouver BC. Vancouver Trade and Convention Centre. For more information call 1-800-668-7083

NOVEMBER

THE HOME COMPUTING & ENTERTAINMENT SHOW November 18 & 19, 1995 at the Toronto Congress Centre (650 Dixon Rd at Highway 27). Sat. 10am – 6pm Sun. 11am – 6pm. Admission $7 per person. For further information please call Bob Poirier, Show Manager at (416)497 9562 ext.403

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MACWORLD EXPO/SINGAPORE July 25–27 1995. Hyatt Regency Hotel Singapore. Contact Matt Meeding at IDG World Expo at 1 800-545-3976 or 508-820 8624

MACWORLD August 8–11 1995. Boston, MA. For more information call Mitch Hall Associates at 617 361-8000

COMDEX August 14–18 1995. San Paulo. For more information call Interface Group at 617-449-6600

PC 95 August 15–18, 1995. Melbourne Australia. For more information call Information Services at 301-656-2942

CD-ROM HOME & OFFICE WORLD August 21–23 1995. New York, New York. For more info call Mecklermedia at 203 226-6967

COMPUTER WORLD EXPO/WELLINGTON, NZ August 22–24 1995. Michael Fowler Centre, Wellington, New Zealand. Contact Theresa Coffey at IDG World Expo at 800-545-3976 or 508-820 8641

WINDOWS SOLUTIONS August 29–September 1 1995. San Francisco, CA. For more info call 415-578-6900.

CORPORATE COMPUTER PROFFESIONAL EXPO September 7 1995. Rosemont IL. For more information call 708-291-8900

INFORMATION SUPER HIGHWAY September 11–14 1995. San Jose, CA. For more information call 408-225-4898 or fax 508-872-1237

Broderbund's The Backyard

Continued from page **93**

still the creativity of the individual. The finished product can also be printed.

In Animal Anatomy children are faced with the task of matching up the different parts of two creatures. A magic wand at the bottom of the picture provides the solution for those who get frustrated easily. A board game that the children can play against either the computer or a friend or parent is also included. The game can be set from easy to hard and the puzzle once again provides a magic wand for the solution if it is desired.

Click on the storybook on the picnic table and the screen is filled with two habitats and different animals on the border. Once placed in the correct habitat, the animals give a brief demonstration of normal everyday behavior.

The graphics are excellent and everything is designed to be thought provoking and fun. You really need to have a sound card to fully appreciate it all but it will work well if you do not. This is not as educational (learning letters and numbers) as, say, the Playroom, but stresses awareness of the environment instead. All in all another splendid offering from Broderbund. ❑

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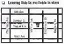

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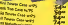

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Market Share Windows Illustration Software
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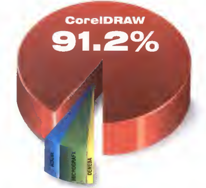

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